

# **REPORT OF THE ORIENTATION PROGRAMME FOR VOCATIONAL COMMERCE TEACHERS IN THE EASTERN REGION**

**Duration : March 1-10, 1993**



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## FOREWORD

This report relates to an Orientation Programme for Vocational Commerce Teachers, Junior Lecturers and Instructors which was held under the Programme Directorship of Dr.R.N.Dikshit at the Regional College of Education, Bhubaneswar from the 1st to the 10th March, 1993.

Vocational areas in business were identified; ways and means for self-employment were devised; and criteria of evaluation for certain vocational subjects like Stenography, Type writing, Office practice and Accountancy were laid down. Participants were acquainted with the skill of handling the sophisticated business machines like electronic typewriters, phot-stat copier and the micro computers, including the layouts and requirements of a business vocational department in the school, and the skills of preparing practical note on vocational business subjects.

Twenty four participants from Orissa, Bihar, Assam, Sikkim, and Arunachal Pradesh attended the programme.

Inspite of the fact that the Department of Commerce has only two faculty members, the programme was very well conducted because of their commitment and involvement alongwith the coöperation of external and internal resource faculty. They deserve appreciation.

I trust that this report will give positive inputs to vocational education in the field of Commerce.

Bhubaneswar  
Dated:

(Prof.K.C.Panda)  
Principal



ORIENTATION PROGRAMME FOR VOCATIONAL COMMERCE TEACHERS  
IN TEACHING OF OFFICE PRACTICE, ACCOUNTANCY ETC. FROM  
1.3.93 TO 10.3.93.

List of Participants

- |  |  |
|--|--|
| 1. Sri Debendra Kar,<br>Govt. Higher Secondary<br>Vocational School,<br>Sundargarh.  | 13. Sri Ruchiya-Kumar Panigrahi,<br>Govt. Higher Secondary<br>Vocational School, Angul,<br>Dist:- Dhenkanal.<br>Pin:- 759 122, Orissa. |
| 2. Sri Iqubal Ahmed,<br>Govt. Sr. Secondary School,<br>Pelling, West Sikkim.   | 14. Sri Karunakar Rath,<br>Govt. +2 Higher Secondary<br>Vocational School,<br>Matkambada, Keonjhar.                                    |
| 3. Sri Ramchandra Prasad Rao,<br>Asst. Teacher,<br>Ganghi Enter School,<br>Nawadah, Bihar.                                     | 15. Sri Sunil Chandra Mishra,<br>Govt. Higher Secondary,<br>Vocational School,<br>Sambalpur, Orissa.                                   |
| 4. Sri Ranaju Prasad Singh,<br>Asst. Teacher,<br>C.H. +2 High School,<br>At/P.O. Jhumari Talaiya,<br>Dist:- Hazaribagh, Bihar. | 16. Sri Prasanna Kumar Pradhan,<br>Govt. Higher Secondary<br>Vocational School,<br>Matkambada, Keonjhar.                               |
| 5. Miss Arati Pati,<br>Govt. Higher Secondary<br>Vocational School,<br>Sambalpur.  | 17. Sri Mahendra Meher,<br>Govt. Higher Secondary<br>Vocational School,<br>Kunjelpara, Sambalpur.                                      |
| 6. Miss Narmada Kar,<br>Govt. Higher Secondary<br>Vocational School,<br>Sambalpur.   | 18. Sri Shashi Bhusan Swain,<br>Govt. Higher Secondary<br>Vocational School, Angul,<br>Dhenkanal.                                      |
| 7. Miss Sipra Das,<br>Govt. Higher Secondary<br>Vocational School, Anugul,<br>Dhenkanal.                                       | 19. Sri Suresh Kumar Sarangi,<br>Govt. Higher Secondary<br>Vocational School,<br>Sambalpur.  |
| 8. Sri Pranab Borthakur,<br>Pusarigudan R.K.M. H.S.<br>School, Nagari, Assam.  | 20. Sri Sarat Kumar Mishra,<br>Govt. Higher Secondary<br>School, Doimukh,<br>Dist:- Papum Pare<br>Arunachal Pradesh.                   |
| 9. Sri Manuj Kumar Mili,<br>Govt. Boys H.S. & M.P.<br>School, Jorhat, Assam.   | 21. Sri Paramananda Deka,<br>Chamanda H.S. School,<br>Dist:- Nalbari, Assam.   |
| 10. Sri Gopal Krushna Nanda,<br>Govt. +2 Higher Secondary<br>Vocational Institution,<br>Matkambada, Keonjhar.                  | 22. Sri Anupama Mohapatra,<br>Handidhua Higher Secondary<br>Vocational School,<br>At/P.O. Talcher, Dhenkanal.                          |
| 11. Sri Mangulia Send,<br>Govt. Higher Secondary<br>Vocational School, Dura,<br>Ganjam, Orissa.                                | 23. Sri Asit Kumar Pattanaik,<br>Govt. Higher Secondary<br>Vocational School,<br>Handidhua, Talcher,<br>Dhenkanal.                     |
| 12. Sri Satrughana Senapati,<br>Govt. Higher Secondary<br>Vocational School, Dura,<br>Ganjam, Orissa.                          | 24. Miss Laxmirani Behera,<br>Govt. Higher Secondary<br>Vocational School, Ahiyas,<br>Dist. Cuttack.                                   |

External Resource Persons

1. Prof. D.C.Nayak,  
Principal,  
Marishi College of Natural  
Law, Sahidnagar, Bhubaneswar.
2. Mr. S.B.Mishra,  
Director,  
Institute of Entrepreneurship  
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3. Mr. S.Samal,  
Divisional Manager,  
L.I.C., Nayapalli,  
Bhubaneswar.
4. Mr. G.Sharma,  
Instructor,  
Madhusudan College of  
Accountancy and Finance,  
Chandrasekharapur,  
Bhubaneswar.
5. Mr. A. Nanda,  
Instructor,  
Madhusudan College of  
Accountancy and Finance,  
Chandrasekharapur,  
Bhubaneswar
6. Mr.G. Ananthanarayanan  
Manager,  
Small Scale Industries,  
Development Bank of India,  
IPICOL House, Bhubaneswar.
7. OHO Business House,  
Bhubaneswar.
8. Olivetti, Modi,  
Behind Ram Mandir,  
Bhubaneswar.

Internal Resource Persons

1. Dr.S.T.V.G.Acharyulu,  
Dean of Instruction,  
RCE, Bhubaneswar.
2. Dr. P.Das, Reader in Edn.  
RCE, Bhubaneswar.
3. Dr. R.N. Dikshit,  
Reader in Commerce,
4. Mr. R.Raizada,  
Lecturer in Commerce,  
RCE, Bhubaneswar.

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TASK AHEAD .....

- To identify the vocational area in business:

Vocational areas both in public and private sectors are to be identified. More identification is not enough. The participants will identify the areas where employment opportunities are at present available for our students. The participants will go through the brochures, leaflets and other literature published by the Ministry of Labour and Employment for this purpose. Some of the courses designed by the Vocationalization of Education Unit like Careers in railways and L.I.C. of India will also help a lot.

- To devise ways and means for self employment.

Equal emphasis must also be laid on identifying vocational areas for self employment. Much work has been done by the Institute of Entrepreneurship Development of Orissa and other similar bodies in this regard. Institute of Entrepreneurship Developments as a part of consultancy service have been working on national and regional level. Our participants may also take the help of similar agencies to devise ways and means for self employment. Agencies like the Small-scale Industries Development Bank of India have been working as funding agencies. Our participants may also take the assistance and consultancies of these bodies to achieve the objectives of self employment of their students.

- To chalk out the layouts and requirements of a business vocational department.

Our participants will chalk out their physical requirements taking into consideration the number of students, vocation, labs. and optional subjects. The experiences gained by the participants will help a lot in discussing, suggesting and interacting for this. They will prepare the blue print of physical requirements including the equipment necessary for every vocation. The participants will submit their report group-wise at the end of the programme.

- To develop the skill of preparing, practical note on vocational business subjects.

The lack of practice of preparing practical notes in classes has prompted us to include this objective. Few guidelines are necessary in order to introduce such notes to be prepared by the students. The work done in this regard by the SCERT, Orissa and the vocational education unit, NCERT, New Delhi will be the guiding practices. The participants will prepare similar notes on their respective vocational areas and will submit the same at the end of the programme.

- To acquaint the participants with the new techniques, methods and approaches of teaching vocational business subjects.

Technique like in-basket exercises, role play demonstration and case studies have taken precedence over the old methods of teaching through lecturing and question-answer. Our participants will gainfully experience such new methods through active participation in few of the sessions of the programme. They will also develop the skill of teaching the accountancy through practice sets and work-sheets.

- To develop the skill of handling the sophisticated business machines.

Our participants will get the opportunities of handling some of the sophisticated business machines like electronic typewriter, photostatic copier, laminator and personal computers. They will note down their experiences and submit the same at the end of the programme.

- To evolve the criteria of evaluation for vocational business subjects.

International criteria are available for evaluating subjects like stenography and typewriting. Our participants will be acquainted with the criteria.

They will develop the evaluating criteria for other vocational subjects on the basis of the instructional objectives. They will (a) work out the skill components of their respective vocations and (b) determine the weightage to be given in every skill component.

Success in fulfilling the above tasks will be possible only with the help of active participation of our participants in the endeavour.

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## VOCATIONALISATION OF EDUCATION: AN OVERVIEW

Ramakar Raizada,  
Lecturer in Commerce,  
R.C.E., Bhubaneswar .

Education is an important activity of human life. It converts from 'Man as animal' to 'Man as human being'. In every country education is provided for human resource development, better and more production, national development and needed for enabling man to earn his living.

Present educational system is having academic nature which results more rush for university education, professional and academic courses. So, there is mass educated unemployment in our country and there is need of change in the structure of education. There should be vital link between school and work, education and productivity and education should be for employment and national development. There is burning problem of army of educated unemployment and frustrated youth. There is great need of such educational reconstruction which can make education meaningful, purposeful and functional. Therefore, the concept of vocationalisation of education was developed.

### Rationale of Vocational Education

- (i) 'Work is worship' - based on Indian philosophy of 'Geeta', and this concept should be developed through education.
- (ii) Work and education both should go together till one's life, therefore there is need of such education which involves work.
- (iii) to diversify the students according to their interest, ability, aptitude and attitude in academic and vocational areas.
- (iv) to reduce the burden on higher institutions of learning and rush to college and universities.

- (v) to solve the problem of educated unemployment and reduce frustration of youth.
- (vi) to help in economic and technological development of country by providing manpower for middle level job.

Concepts:

"Vocational Education is the education to be provided after general education ( at +2 stage) for a period of 6 months to 3 years, to develop knowledge, understanding, skill and right attitude for middle level jobs in the form of self employment or wage employment".

Vocational Education is different from general education which is bookish or theoretical. It transmits the knowledge in practical skills. Vocational Education enables a learner to perform service or produce goods upto acceptable standards of society. It is placed in between technical and professional education.

Objectives:

1. To create interest, ability and skill in the learner through education and training for middle level jobs.
2. To develop vocational competence, employment worthiness and result in human resource development for the country.
3. To link education with productivity. The expected outcome of Vocational Education is economic development in rural as well as in urban areas.
4. To reduce unemployment among educated youth and to correct the mismatch between demand and supply of worker through self employment.
5. To reduce pressure on higher education, through diversifying a group of learners at +2 stage to the extent of 10% by 1995 (end of VIII plan) and 25% by 2000.

### Characteristics:

1. It is provided at +2 stage (can also be provided in class VIII, IX and X as pre-vocational courses).
2. It's duration is normally 2 years (+2 stage), but ranges from 6 months to 3 years depending upon the knowledge, understanding, skill and attitude to be developed for a particular occupation or family of occupations.
3. It caters the needs of middle level jobs either for self employment or wage employment. The middle level jobs are crucial for increasing productivity and improving services.
4. It can neither be equated with technical education nor general education, it includes general education of good quality with specific practical job training in skills.
5. Selection of various courses is based on the needs of community through the conduct of district vocational surveys and needs revision after some period as per changes in needs of society.
6. It is terminal course leading to job but not the terminal of education. Openings are there for further and continuing education. Programme of Action, 1992 has specifically emphasised a vertical mobility of +2 vocational course students.
7. It has to use scientific methods for training and development of skilled personnels.

### Historical Background:

Macaulian System of Education was introduced in India by Britishers as per their requirements. But unfortunately even today we are following the same pattern and it resulted in army of educated unemployed persons and frustrated youth. The education system has no relevance with the socio-economic conditions of our country and the work which students are required to do in the firms and organisations for employment has hardly taken care in their studies. This lacuna of education system and need to make it work oriented was reflecting in reports of several commissions and committees, even in British period.

Wood Commission-1854, Hunter Commission-1832, Hartog Committee-1929, Sapru Committee-1934, Abbot and Word report- 1936-37, Sargent Report-1944 etc. , all emphasised for linkage of education to work and education should be as per need for mass employment to avoid student's unrest. But British Government could not pay an attention due to it's wasted interests. Although some polytechniques came into existence in that period.

After independence our own government appointed Mudaliar Commission, in 1952. The Commission recommended that the aim of education should be improvement in vocational efficiency. Importance to dignity of work, good attitude for work and greater emphasis on craft and productive work in all schools was suggested. The multipurpose schools with various streams developed as per recommendations of Mudaliar Commission. In multipurpose schools various courses were available as per needs and abilities of students. Large number of students took agriculture, technical, commercial and other practical courses for all round development of head and hand.

Kothari Commission (1964) pointed out that in our country Vocational Education is felt as inferior form of education and fits to those who fail in general education which is a wrong concept. Kothari Commission recommended for 12 year schooling in place of eleven year and gave a serious note for rush to universities. Commission recommended a vocational stream of education with variety of courses from different areas and recommended at least 50% of beyond 10-years as schooling should be diverted to vocational education. The targets were unreal and ambitious, so government had decided to divert 10% to 1990 and 25% to 1995, which also could not be reached in 1990 and it was again revised in 1992 for 10% to 1995 and 25% to the year 2000.

The National Policy Resolution, 1968 accepted the recommendations of Kothari Commission and entrusted NCERT the task of preparing curricula for such courses and also helping the states in implementation of vocational education.

So, the programme of Vocational Education was initiated in 1967 by some states upto 1979, 6 states and 2 Union Territories introduced it. upto 1986, 9 states had introduced vocational education in the area of agriculture, technology, commerce, home-science, paramedical and miscellaneous services and others. Vocational Education was introduced in Orissa also in the academic session 1987-88 by upgrading 31 high schools to vocational higher secondary schools in 20 areas (including office management and stenography). The number of schools increased to 150 in the year 1988-89 and extended to insurance, banking and accounting also in the field of commerce. It was spread to 12 states and 5 Union Territories involving 1,70,000 students enrolled in 2,900 vocational schools opting 115 courses of vocational education. At the end of 1991-92 12,543 vocational sections were approved in 4400 schools thereby creating facilities for diversion of about 6.27 lakh of students of +2 stage. This accounts for 9.3% of student enrolment at +2 level. Although quantitatively the implementation of vocational education at the +2 level was fairly substantial but in qualitative terms there remains much to be done.

Centre sponsored scheme:

Vocationalisation of Education has been accepted as one of the priorities in the National Policy on Education, 1986. It was felt that union government should be responsible for policy, guidance, standards and there should be a liberalised financial assistance to states for achievement of fixed targets.

Accordingly, one of the centrally sponsored scheme in Vocationalisation of Higher Secondary Education under which substantial financial assistance is provided to the state governments was introduced to implement the programme. The financial assistance was given by central government to states, to start the vocational education programmes and will continue for one or more plan periods and after that state governments have to implement scheme by their own resources. The assistance was given as under:



(A) 100% Assistance

for apprenticeship training, valuation and monitoring, conduct of vocational survey, development of text books, development of curriculum-workshops, resource persons, training programmes. Instructional material subsidy, teacher training courses, equipments to schools, workshop or laboratory buildings.

(B) 75% Assistance

Vocational School staff.

(C) 50% grants:

Vocational wings of Directorate of Education, District Vocational wings, SCERT Vocational wings.

In the scheme, the state government had to prepare a project report of programme to be taken up. The proposal will be examined and grant disbursed. 50% of approved grant of one year will be released as first instalment and remaining 50% after state government reports that 75% of the earlier amount is used, with its implementation report. Voluntary Organisations can also get grants for implementation of Vocational Education programme, on the basis of proposals approved for them. The scheme was implemented to all states and Union Territories except Tripura, Daman & Diu, Dadar and Nagar Haveli and Lakshadweep upto 1992.

At state level 15 out of 24 states and 2 out of 4 Union Territories have set up offices for Vocational Education at Directorate level. Only 8 out of 24 states and 1 out of 4 Union territories have set up organisation for vocational education at SCERT level, and only eleven states have established.

Programme of Action, 1992 insisted for systematic and well planned programme of vocational education. It reviewed the policy and revised policy has given two modifications - targets 10% shift of students to 1995 and 25% to the year 2000 and envisage children at higher secondary level being imported generic vocational courses with several occupational fields.

Management of Vocational Education was suggested:

At National Level

- Joint Council of Vocational education under chairmanship of Education Ministry for planning and Co-ordination of Vocational programmes, to provide guidelines for development of vocational programmes and to evolve scheme for involvement of public and private sector industries in vocational education.
- Bureau of Vocational Education in Department of Education (MHRD) would provide secretarial support.
- NCERT through Department of Vocationalisation of Education would function as apex level research and development body.

At Regional Level

- Board of Apprenticeship Training to cater the needs of Vocational students after completion of vocational courses at +2 level.
- Regional Colleges of Education under NCERT would function as regional vocational teacher training institute in addition to performing research and development functions.

At State Level:

- State Council of Vocational Education was suggested to be set up.
- Directorate of Education should provide administrative leadership for vocational education.
- Separate wing in SCERT should provide research and development support for vocational education.

At District Level:

- District Vocational Education Committee would be constituted to promote the programme of vocational education and to maintain linkage with Directorate of Education and other related institution.
- A senior staff member will be incharge of the management and active implementation of vocational courses in the district.

It was also directed under capital programme of Action 1992 to set up a Central Institute of Vocational Education under the umbrella of NCERT but with considerable functional autonomy. It was established in the month of August, 1992 in Bhopal. It will be the apex research and development institute in the field of vocational education. It was also desired that state governments should set up adequate management strategy at all levels. Personnels manning the vocational education should be well trained and central institute of vocational education should be made functionally effective as early as possible.

The main emphasis during the eighth plan would be consolidate and quality improvement. By eighth plan it is proposed to create facilities for diversion of an additional 2.62 lakh of students at +2 level. Apprenticeship training with adequate linkage to industries was also emphasised. A phased and well structured programme of teacher training will be drawn up by Central Institute of Vocational Education and implemented in Regional Colleges of Education on a priority basis and extended to other universities and colleges. Upto 8th Plan, 1,600 pre-service vocational teachers are expected to get training. Inservice teacher training programmes will be conducted by state government under the guidelines of Central Institute of Vocational Education, SCERT will work as nodal agency and will develop linkage with DIETs. Central Institute of Vocational Education will also conduct in service training for teachers at national and regional level and by 8th Plan 12,000 teacher will be getting inservice training in vocational education area . (POA, 1992).

#### Problems and Challenges:

1. The Vocational Education Programme was started in 1976, but its progress was very slow. Still it needs implementation and enough coverage in the states.
2. The public at large has generally remained apathetic to the programme and they give greater preference to academic education which leads to white collar jobs.

3. Vocation Education, by nature is more expensive due to needs of equipments, materials etc. for practical work.
4. There is lack of proper administrative structure and teacher training, teachers need the orientation as well as practical training. In absence of practical knowledge or competence the quality of vocational education is suffered.
5. There is serious lack of suitable teaching-learning and audio-visual materials for vocational education. Teachers depend on own notes, which often need improvement.
6. Certificates and diplomas of vocational courses have not been recognised by employment agencies and institutions of higher learning and it becomes difficult for pass-out to get jobs or admission.
7. Lack of employment opportunities.

This is a little exposure to the problems of vocational education. More and practical problems will come up with discussions.

Essentials of a successful Vocational Education Programme:

1. In vocational education creditability should be established with qualitative, relevant and acceptable standard of vocational education.
2. The linkage of vocational education with employment should be firmly established.
3. An adequate physical and academic infra-structure for vocational education programmes should be provided.
4. Proper funding of vocational education programmes should be assured.
5. Adequate facilities should be available for teacher training-pre-service and inservice.
6. There should be adequate facilities for teacher trainers.
7. Management structure of vocational education should be effective.

8. There should be equivalence among academic, vocational and technical courses.
9. Curriculum developments in Vocational Education should be in consultation with employers.
10. There should be full community involvement and participation.
11. Other Government Departments should fully co-operate with Department of Education in the States.

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## LAYOUTS AND EQUIPMENTS IN VOCATIONAL COMMERCE COURSES

Dr. R.N.Dikshit

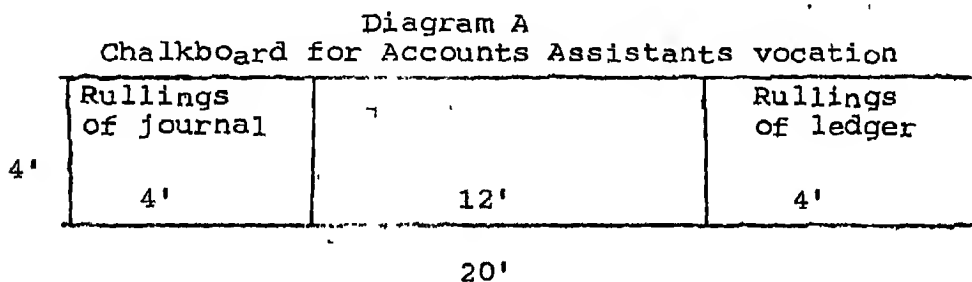
The authorities must provide adequate physical facilities for the successful implementation of vocational programme. Any programme in haste without proper facilities may end in fiasco causing unnecessary frustration. The physical facilities include building/rooms, chalkboards, furnitures, teaching aids, business machines and other accessories. Each vocational commerce courses require a set of books and equipments separate lay-out for the building and a well designed set of furniture.

The Principal/Headmaster's cabin, school office store, N.C.C. room should be located preferably on the ground floor and the class rooms on the first floor. In no circumstance, they should be mixed up. In case of single-storey building, a wider entrance should divide the classrooms from the offices. The reason of not mixing up the two is to keep the classrooms away from public disturbances during admission etc. and also for efficient administration and control of the school authorities. Laboratories should be adjacent to the classrooms so as to make easy movements of the teachers and students. There must be a separate common room for teachers, reading and recreation rooms for students.

Number and size of the rooms depend upon the number of students and types of courses offered. There should be provision for sufficient light and air. Window should be glass fitted. Laboratories should have water basin and mirror. Provision of black curtains, should be there so that the room may be converted into a darkroom for use of audio visual aids. Arrangement of multi-plug holes.

Cemented and wooden chalk boards are very much popular in our country. Glass chalkboard of green and yellow colour is also gaining increasing popularity. The size of the chalkboard for Accountancy, Cost Accounting and Taxation Assistants vocation should be large, preferably of 4' x 20'. The left and the right side may have the permanent rullings of Journal and Ledger respectively. This will save much time of the teacher in working out the problem. It should be located at  $2\frac{1}{2}$ ' above the floor.

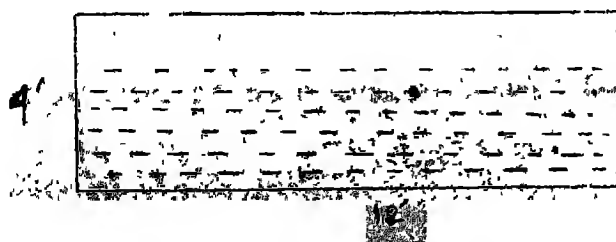
Diagram A below indicate the size of the chalkboard and its division into Journal and Ledger rulling.



Smaller chalkboards (size being 4' x 12') in the office practice room and stenography room may serve the purpose. The chalkboard in the stenography room may have permanent dotted rullings in 3" apart. This will save much of the teacher time in rulling the chalkboard for writing the stenographic outlines. It should also be located at  $2\frac{1}{2}$ ' above the floor.

Diagram B below indicates the size and rullings of chalkboard in a stenography laboratory.

Diagram B - chalkboard in a stenography Lab.



The office practice laboratory should have a glass chalkboard of 4' x 12' size located at  $2\frac{1}{2}$ ' above the ground floor. Writing of letters both commercial and Government on a glass chalkboard may add to the beauty of the letters.

Lay-out of Stenography and Typewriting room: To accommodate twenty four number of students a room of 30' x 36' is required. Light should come from the sides of the carriage release levers. Instead of fixing the tube lights on the walls, they should better be hanged on the roof wall. There must be atleast one steel cabinet to store the small and day to day usable articles like stop watch, ribbons, carbon papers, and other accessories.

There must be one Manual typewriter on every table. All typewriters should face the same wall so as to make the teaching direct and effective. Every learner should face the chalkboard and the demonstration stand. Ten percent extra number of typewriter may be purchased. So that no student should sit idle for want of machine if his/her machine goes out of order. Typewriter of the same make may be purchased. One electronic typewriter may help the advanced learners which may be used on rotation basis. One demonstration stand is a must in a typewriting class which should be movable, rollable and the height adjustable. If fund permits, typewriter of different shapes, sizes and a word processor may be purchased.

Typing table should be of either rectangular or L shaped. The rectangular typing table should be of 36"x40". Diagram C below indicates the shape and size of a L shaped typing table.

Diagram C - Typing Table





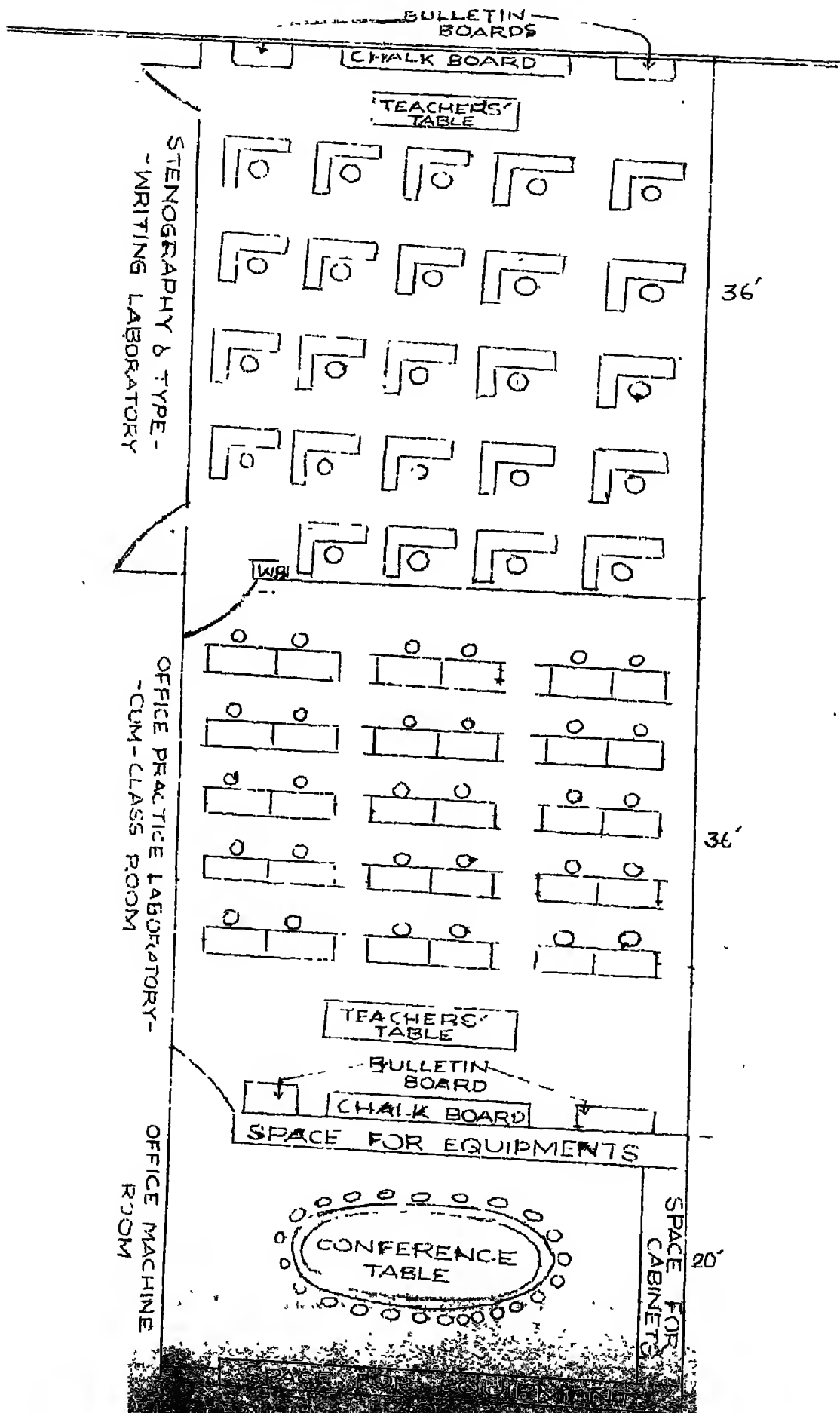
Adjustable chairs for typists whose height can be made lower and higher are available in the market. The stenography laboratory should have atleast one wash basin with mirror fittings to clean the dirty hands.

Besides the above specified equipments, the followings may also be purchased for the Stenography and typewriting laboratory.

- |                        |   |
|------------------------|---|
| 1. Copy holders        | 11. Folding machine                         |
| 2. Waste paper baskets | 12. Paper cutting machine                   |
| 3. Ribbons             | 13. Film strips relating to SG & TY.        |
| 4. Carbon papers       | 14. Record player                           |
| 5. Stencil papers      | 15. Disc of different speed                 |
| 6. Eraser              | 16. Film strip projector and black curtain. |
| 7. Correction fluid    | 17. Tape recorder                           |
| 8. Ex-eraser           | 18. Chart, graphic chart etc.               |
| 9. Tray                | 19. Book stand.                             |
| 10. Stappler           |   |

Diagram - E

LAYOUT OF LABORATORIES - STENOGRAPHY AND  
OFFICE PRACTICE VOCATIONS.



Lay-out of office practice Laboratory: The office practice laboratory may be managed in a relatively smaller room. This is practically office machine -cum- store room. Enough space is provided lengthwise to install the various office equipments including duplicator and other business machine. If fund permits, the room should have air conditioning facilities where a computer may also be installed. It should have conference table with sufficient number of chairs to demonstrate the looking of the business machines.

The office practice laboratory-cum-classroom is meant for teaching government and business letters of various styles and designs. Charts of various styles and designs are now-a-days available in the market. Such charts may be purchased. Provision should also be made to hang such a chart as required at the time of teaching. Tables of rectangular size (  $1\frac{1}{2}' \times 2\frac{1}{2}$  ) may be purchased.

Given below is a list of office equipments and other accessories required for office practice laboratory.

- |  |                                       |
|--|---------------------------------------|
| 1. Calculator  | 13. Time keeper's machine             |
| 2. Book-keeping machine  | 14. Different types of filing covers. |
| 3. Cash Register   | 15. Note sheets.                      |
| 4. Photo copier  | 16. Picture, map, chart, models.      |
| 5. Duplicating machine   | 17. Receipt and Despatch Register     |
| 6. Filing cabinets of different types-standing, flat, pigeon hole etc. | 18. Postage stamp register            |
| 7. Different types of filing equipments.                               | 19. Different types of envelopes      |
| 8. Card index and visible index file.                                  | 20. Model letter-Govt. and business.  |
| 9. Duplicating aids  | 21. P & T guide                       |
| 10. Folding and stapling machine.                                      | 22. Telephone Directory               |
| 11. Wall clock   | 23. Local trade Directory             |
| 12. Cheque writing machine.  | 24. Railway Time table.               |
|  | 25. Paper cutting machine             |
|  | 26. Duplicating accessories.          |

27. Leaflets of various business organisation.
28. Forms used in post offices, railways and banking institutions.
29. Address writing machine.
30. Weighing machine
31. Pasting machine
32. Invoice making machine.
33. Sales recording machine
34. Coin sorter
35. Telephone
36. Overhead projector
37. Tape Recorder
38. Filmstrip projector
39. Folding chairs
40. Spiral binder.

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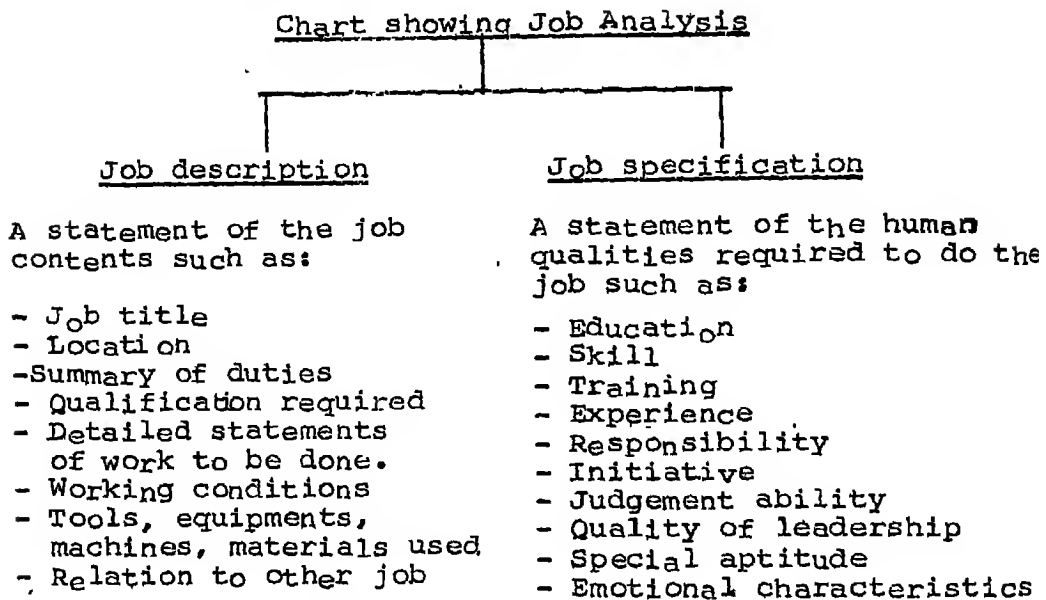
## COURSE DESIGNING IN VOCATIONAL COURSES

Dr. R.N. Dikshit

The study of designing a vocational course requires an elaborate treatment. A large number of factors are considered before designing a suitable course-contents in a vocational course. It can never be a one-man job. A committee is constituted for the purpose. This committee is suitably represented by academicians and experienced persons on the field. Besides prescribing the course-contents, the committee may also advise the following: (a) duration of the course, (b) standard of admission, (c) standard of achievement and (d) requirements of equipments etc. Some of the Vocational courses already prepared by other bodies may also be supplied to this committee for review and inclusion in the prescribed course. Keeping in view the uniformity to be maintained in all vocational courses under one body certain general guidelines are always adhered to; example number of papers, (both theory and practicals) total number of marks, duration of course, bases of declaring the results and mode of examining the students/trainees etc.

The first and the foremost step in designing the course contents of any trade is to spell out the objectives. The general objectives of a vocational course usually are (i) to prepare skillful and hence employable persons in the concerned vocation and (ii) to develop the required personality traits for the vocation. The specific instructional objectives of the trade course centre around . (a) understanding, (b) knowledge, (c) skill components, (d) application and (e) technique. In order to draw out the skill components of a particular vocation, the committee usually prepare the course either out of their own experiences or job-analysis or the both. Job-analysis

constitutes job description and job specification. The former relates to the specified job and the latter to the concerned person.



Selection and organisation of subject matter based on

job analysis: Here is a procedure that might be used in working out a trade course based upon job analysis:

1. In case of a number of skill components, select only those operations or elements listed most often.
2. Select only those components that can be trained in a classroom situations. Some of the learning elements are so intimately connected that they can be learned only on the job.
3. Elements which require little training may be omitted.
4. Serious emphasis should be given for minor elements but of rare occurrences.
5. Give more emphasis for the following viz.,
  - elements to be taught,
  - degree of emphasis to be placed,
  - relative importance

- attitude or traits that must be taught in relation to that particular job .
- related training needed.

6. These actual elements must then be organized into training units.

7. Methods for avoiding errors and doing the work in the manner should be emphasised.

8. Compare the contents of a newly organised training project with those already in existence.

9. Sequence and length of a training project must be determined.

The number of papers to be prescribed will depend upon the curriculum patterns to be followed. Instead of an isolated or fused curricula, most of the +2 councils have prepared to follow either a core curriculum or a corelated/interrelated subject curriculum. The following Diagram A and Diagram B indicate a core curriculum pattern and a corelated subject curriculum pattern respectively.

Diagram A - Core curriculum

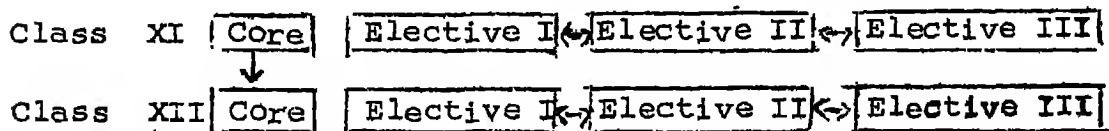
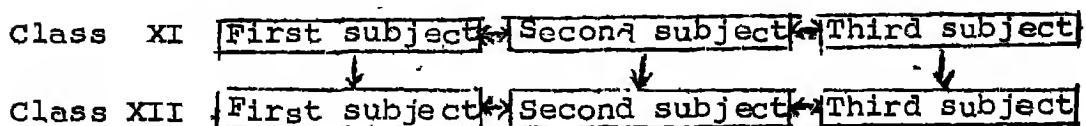


Diagram B - Corelated subjects curriculum.



Those subjects and experiences required of all students such as General Foundation Course (GFC), English and M.I.L. are referred to as core subjects. Corelated

or interrelated subjects curriculum pattern establishes horizontal correlation of subjects as well as vertical sequences.

An analysis of the above discussion devolve into the following twelve basic factors:

1. The general and specific target of the course contents must be spelt out.
2. Details of the course contents must be based on actual study of the job needs. In order to bring out the important training components or key points, the job-break down technique may be followed.
3. The desired standard of achievements should be specified for every unit of the course. When some of the course contents require more acquaintancesh, other may require mastership and the speed to be acquired.
4. Place of teaching may also be mentioned in relation to the units of the courses. Portions of the course contents to be taught in the classroom, laboratory, on-the-job, off-the-job, formal or informal situation may also be advised.
5. The physical facilities including books, periodicals equipments both essential and desirable should also be prescribed.
6. The course contents may be suitably apportioned on the basis of period of the course i.e. semester or annual. Theoretical and practical course content should be judiciously demarkated and these two should not overlap on any account.
7. The sequence of the theoretical course contents should be logical. On the other hand, the practical portion of the course contents should be sequential.
8. Besides the 'how' aspect as discussed above the prescribed syllabus should also take 'Why' aspect into consideration.



9. The course contents may also hint at the manner in which the teaching materials will be taught i.e. a straight lecture procedure or job-sheet procedure.
10. Persons to impart teaching may also be specified e.g. regular teacher, competent workers/professional persons and guest speaker etc.
11. The type of students to be enrolled on the basis of sex and ability may also be mentioned.
12. The detailed of the evaluation procedure like special test, oral or written, term paper required etc. may also be mentioned.

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## VOCATIONAL TEACHER: COMPETENCIES & PERSONALITY TRAITS

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Education should be for employment and national development. For this purpose education is to be linked with productivity, it is to be made purposeful, meaningful and function. Therefore the concept of "Vocationalisation of Education" was developed. The central tenet of vocational education is 'to fit for useful employment' and economic improvement of the individual.

Vocationalisation of Education has been accepted as one of the priorities in National Policy on Education, 1986. As it is a new idea of education, therefore, there is great need of organisational set up, infrastructure (workshop, classrooms, labs. equipments), efficient teachers, adequate survey, curriculum, instructional material, on the job trainings, evaluation and proper monitoring.

### FUNDAMENTAL CONSIDERATIONS OF VOCATIONAL EDUCATION

Fundamental considerations provide basic rules or guidelines for implementation of the programme. Some basic considerations for vocational education are:

#### A. FOR ORGANISATION

These are concerned with definition, functions, needs, and procedures. They assist in arriving at decisions regarding establishment of vocational education programmes, constitute effective means of evaluation of the performance and help in locating shortcomings etc., such considerations are:

1. Vocational Education is part of the total educational programme:

Vocational Education is not a substitute of general education but a component part of the total educational programme of those persons who have selected an occupation and desire to prepare or progress on it. Vocational Education prepares for success in chosen occupation. One should devote his early educational life to general education and after choosing occupation should enter into vocational education.

2. Vocational Education is to prepare persons for and enable them to progress in socially useful occupation.

Vocational Education can not be defined by designating certain subjects as vocational subjects and others as non-vocational subjects. Any subject, if studied by a learner of the purpose of preparing for or progressing in an occupation, becomes a vocational subject for him. A student should not be enrolled in a vocational course till he has made a choice of an occupation and such student should continue his general education.

3. Vocational Education is needed to ensure an adequate and efficient labour supply:

Technological changes take place to increase the efficiency of modern industry and business and it requires an everchanging programme of vocational education to meet the needs. Employed workers may also join these courses in part-time or evening classes. These courses reduce the time required for learning the new techniques and operate in normal efficiency.

4. Areas of Vocational Education should be based on community survey:

Vocational education has to cater the individual and community needs to be determined through community surveys. Surveys determine nature and scope of vocational education, subject matter to be transmitted, materials and processes to be used and facilities and equipment to be provided. Surveys also reveal the qualifications and qualities that students should possess for the course and possibilities and limitations of new

enterprises. Qualified personnels are needed in planning, conducting and interpreting the survey with different techniques, views of experts and researches

5. Vocational Education Programmes should be based on continuous research:

Productive processes are changing continuously, therefore the technique or skill required for the process also change. Research should be carried out for discovering better ways of carrying out present educational practices and developing ideas for developing new practices.

6. Occupational information and guidance should be provided to the Vocational Students:

Vocational guidance and Vocational education are two separate movements but rather closely related. They operate continuously and needed by every individual. Vocational guidance supplies individual that with an inventory of abilities, aptitudes and interests what occupation can he match. The service supplies information about requirements of various occupations and assists the individual to secure a position and should continue to counsel with him concerning problems of adjustment and promotion.

7. Local initiative is essential for success of Vocational Education:

The state and central units may be called upon to provide some form of leadership and assistance in planning and executing the action programme but local initiative and support are essential for establishment and running of vocational education. Local industry, business, agriculture, and labour needs to be met and the experts in these local fields are in a position to know local needs and requirements and consequently may provide advice and counsel vocational educators on programmes, facilities and personnel. So, local initiative should assume responsibility for determining the need for the course and for assisting in organising for it. Local Vocational Education Managing Boards or Committees may be constituted for this purpose.

8. Vocational Education Teachers should be occupationally competent:

The vocational teachers or personnels involved must possess occupational experience in the field in which they are working. It is needed to enable the teacher to acquire competency in the occupation. Student/worker lose respect for confidence in the teacher who is not apt at the trade or occupation.

9. Vocational Education Personnels or Teachers should be professionally qualified:

Professionally qualified refers to the courses and experiences concerned with the principles and practices of teaching. Professional Education is as essential for vocational teacher as for it is in case of general education. Teaching content of vocational education varies from area to area and from time to time. Vocational Teachers should use job instruction sheet, different evaluation techniques, course calendars, long time training schedules, class and shop organisation plans, purchase of supplies, handling of tools, local trips, home visits, visits to local industries etc. in normal teaching. All these can be efficiently done when they are professionally equipped with specific type of training.

10. Programmes of Vocational Education should be operated efficiently:

Qualified Vocational Teachers provide efficient instructions. Good vocational education instruction require adequate space, equipments similar to that used in business and industry, sufficient supplies of the kind and quality, properly selected library material and visual aid equipments. The presence of these does not guarantee efficient instruction but contribute to it.

B. INSTRUCTIONAL METHODOLOGY:

Due to interests and purposes of learner, demands of industry and business enterprises, standards of achievement and performance and constantly occurring technological changes the materials and methods of

instruction in vocational education differ from those of general education. Some important considerations in this regards are:

1. Vocational Instructions should be available for those who need and can be benefitted by it:

A common misconception which has prevailed is that vocational education is for dull students who are not able to learn the subject matter commonly associated with mental discipline. Students when motivated by a desire to prepare for a chosen occupation, perform much better than those who are not so motivated not necessarily because of superior or inferior mental/ physical capacity but because of felt need which generate motive.

2. Vocational instructions should be established and maintained on the basis of vocational needs:

The content of Vocational Education consist of the knowledge, skill and attitude that the trainee needs to perform the job efficiently for which he is being educated. Proper job analysis given information and direction based on specific needs of the occupation. Therefore vocational teacher should do job analysis before teaching.

3. Conditions under which vocational education is given should be similar to the desirable conditions in the occupation:

Different items, supplies, equipments used in instruction, workshop arrangements, laboratory arrangements, classroom, teaching, evaluation etc. come under conditions and they should be similar to occupation to achieve the speed and accuracy required by industry, agriculture and business. Sufficient time should be given for laboratory work or field work. Teacher should act as supervisor or foreman and should ensure pride in work, habit for care and upkeep of tools and equipments, observance of safety rules etc. in learners.

4. Vocational Education programmes should include both short-term intensive Courses and long term courses:

Vocational Education should be available for all persons who need and can be benefited with it. Employed persons may be unable to attend full time school course, for them short, intensive courses at convenient time should also be organised. For the pre-employed and re-training purposes long term courses are necessary.

5. Vocational Education instructional programmes should be flexible in nature:

There are frequent changes in practices applied in occupations so, minimum of restrictions should be placed on school authorities and vocational teachers in making decisions like duration of courses, materials methods, instructions, means of evaluation etc. Restrictions should be only for assuring high standard and value of the vocational education programme.

6. Real jobs provide best laboratory for vocational learning:

Vocational Teachers should insist on 'learning by doing' as real jobs provide a challenge to the learner that cannot be provided in developing knowledge, skill, attitude through the use of practices or exercises. Real jobs can be provided in typing, account-making, etc. and they will provide better learning than typing exercises of '20th Century Typewriting'.

7. The Standards in vocational education should be as high or higher than the accepted standards in the concerned occupation:

Evaluation decides the standard and it should be in terms of the expectations of industry, agriculture, business or the occupation. The products should be saleable. Standards in vocational education should be as high or higher than the accepted as desirable in world of work. Different occupations have various ways of evaluating the product or service, same device and technique should be used in vocational education.

8. Vocational instructions should include information and activities designed to protect and conserve human life:

Vocational students should be taught to work safely and special emphasis should be placed on safety precautions, while students are learning to operate machines. Some students individually or a committee of students, in a rotating manner should assume this responsibility, but the vocational teacher should all the time be cautious. Visual aids like posters, films, slides, models etc. may be used to supplement safety instructions of vocational teacher. The ultimate aim of safety education is to develop safely concept that will serve to conserve human life.

Mudaliar Commission report states, "The most important factor in our educational structure is the teacher. He occupies a distinct position in the society and the reputation of the school and its influence on the life of the community invariably depend on the kind of teachers working in it". Any educational programme, chalked out by the most efficient educational experts may achieve success only when, it is implemented in desired manner and right spirit by the teacher. Becoming a successful teacher presents a greater challenge today than at previous time in history due to advancement of science and technology and wide increase in learning sources.

The most important factor entering into the success of the vocational education programme is the vocational teachers. They have to prepare students in such a manner that they are able to get employment or settle in the business without getting any further training. Vocational teachers will have to create conditions in which the unlimited potential of human brain and body can be exploited and encouragement is provided for universal use of the scientific methods with involvement of verbal, mental and motor behaviours. Vocational Education is primarily concerned with psychomotor development of muscular skills, co-ordination, and development of manipulative skills. Therefore, vocational teachers will have to be resourceful and fully equipped with necessary knowledge, skills and



professional qualities. They should be teacher by profession as well as professionals of the area/occupation rather than simply master degree holders. Vocational teachers will also be deeply concerned with the developments taking place in the world of work. Their role will be for - i) establishing well equipped resource centre, ii) providing training of recent/new techniques and emphasising self learning and iii) encouraging creativity in the students.

Efficient discharge of the duties and responsibilities of vocational teachers need specific competencies and abilities in comparison to general academic teachers of traditional nature. It needs much to improve the education system at degree and post graduate level to make it in applied form to suit the job requirements of the vocational teachers. Practical on-the-job-trainings in the occupation area are necessary at those levels, under the supervision of college/university and industrial/agricultural/commercial/business organisation before awarding degree to the students. This type of attachment with real occupation will provide them live experience of the area. They are also supposed to be in close touch with the technicians, artisans, producers, or experts of the concerned area. A general spell-out of the competencies needed in a vocational teacher follow hereunder.

#### IDENTIFICATION OF GENERAL COMPETENCIES OF VOCATIONAL TEACHERS

Sl. No.	Task	Required Competency
1.	Becoming vocational teacher.	<ul style="list-style-type: none"> <li>- suitable educational qualification</li> <li>- technical knowledge, skill and aptitude for the job.</li> <li>- knowledge of the things one must know and do in the trade.</li> <li>- listing specific directions for performance of each item.</li> <li>- listing topics concerning the information needed to carry out directions.</li> </ul>

- listing science, maths., or related subjects topics providing the information needed to master the job.
- professional degree/deploma/certificate.
- experience of the occupation.
- 2. Teaching of the theory of job.
  - aptitude to become a teacher
  - curious
  - up-to-date knowledge of the trade
  - good expression.
  - careful lesson planning habit
- 3. Demonstration
  - knowledge of the productive skill
  - desire to learn new/changes/modifications in the skill.
  - habitual of using equipments and supplies. similar to the job situations.
  - habit of practicing
  - slow operation of the process
  - alertness
  - proper planning habit
- 4. Instructing
  - interest in students
  - technical proficiency
  - habit of using library and instructional material.
  - enthusiasm
- 5. Taking precautionary measures.
  - knowledge of safety precautions for supplies, tools and equipments
  - habit of consulting experts
  - confident
  - cautious
  - habit of expressing cautiousness through oral instructions, charts, pictures, models etc.
- 6. Supervising
  - leadership
  - ability to secure co-operation.
  - ability to inspire.
  - technical competence
  - ability of workshop organisation
  - enthusiasm

7. Maintaining Discipline
  - thorough knowledge and improved skills
  - punctuality
  - impartiality
  - good character
  - sound mental and physical health
  - understanding of needs of students
  - democratic and thoughtful approach.
  - a sense of justice and fair play.
8. Admission of students.
  - knowledge of admission procedures
    - issue of notice
    - listing of applications
    - arrangement in order of merit
    - notifying selection list
    - issue of form, dev. of fee, entry in register.
  - proper record-keeping
  - energetic.
9. Maintenance of stock of supplies, equipments tools and products.
  - knowledge of quality equipments, tools and supplies with their nature
  - capable of locating suppliers of different items.
  - knowledge of purchase procedures:
    - calling quotations
    - preparing comparative statement
    - placing order
    - receiving goods.
  - capable of maintaining consumable and non-consumable stock registers.
  - rationality and foresightness
  - neat and accurate work
  - promptness
10. Selling products
  - knowledge of sale procedure
  - able to propagate the products
  - able to organise exhibitions, fairs, fete
  - courtsey and co-operative spirit
  - responsible
  - honesty and reliability
  - proper record keeping habits.

11. Guidance counselling and placement.

a. for choice of course -able to judge the competence and potential of students.

- knowledge of different types of aptitude tests available for different vocations.
- habit of maintaining cumulative record of students.
- helping attitude

b. for placement

- knowledge of available jobs
- knowledge of loan/subsidies/assistance. facilities of government for establishment of business.
- knowledge of competencies needed for different jobs.
- habit of maintaining complete record of pass-outs.
- maintains good contacts with employers, businessmen and govt. officers.
- approaching behaviour.
- knowledge of problems of workers/employers.
- enthusiastic
- resourceful.

12. Studying local occupational needs:

- capacity to organise vocational survey.
- habit of making local trips to the concerned productive organisations
- inviting employees/employers for discussions and guidance of self and students
- dynamic in thought and action
- enthusiastic
- able to draw conclusions

13. Contacting experts - knowledge and contacts with  
in the field. technicians, experts etc. working  
in the field.
  - acceptance of responsibility
  - interest and enthusiasm
  - cheerful
  - good memory
  - keenness
  - resourcefulness
14. Establishing  
rapperts with  
the producers.
  - energetic
  - informed of accomplishments
  - social and cheerful
  - organisation capacity for talks,  
visits etc.
  - complete record of students
  - habit of inviting and going to the  
employers for discussions and  
guidance.
  - dynamism
  - initiative
  - mannerism
15. Professional  
growth.
  - mastery on subject and skill
  - training
  - professional attitude
  - keeping aware of changes
  - attending workshops/seminars/  
conferences.
  - contribution in journals and  
periodicals.
  - library habits.
  - practice oriented.

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Apart from these general competencies the specific competencies as per occupational area are also needed for vocational teachers. Such specific competencies vary as per the vocational course e.g. for stenography vocational teachers there will be need of (i) good language background, (ii) clarity in speech, (iii) good drafting, (iv) good display habit (v) critical attitude towards spelling, punctuation etc. and (vi) good speed with

accuracy in typing, for office practice course the vocational teacher should possess skill in drafting, skill in handling labour saving devices etc. and for accountancy and auditing course there will be need of a good numerical ability with the competencies.

The occupational expertise, teaching methods, evaluation techniques, and other related duties like maintaining records, stores etc. required for vocational teacher differ from general subject teachers. Such specific competencies can be developed only by designing and organising special type of integrated academic-cum-professional education training programmes or courses on the same line as four RCEs are running B.A., B.Ed. and B.Sc., B.Ed. courses. Such courses will definitely provide the education in applied form and enrich the occupational competencies (through linking the students with industries, firms etc.) and professional competencies required for becoming a successful vocational teacher. After seeking job as vocational teacher, they should also be required to undergo the refresher courses during summer vacations in which they will learn the recent processes, procedures and practices by the experts in the area through on-the-job-training, as per need and resources.

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#### Appendix - I

#### ETHICS FOR VOCATIONAL TEACHERS

##### (a) Relation with pupils, parents and community:

- Student-welfare is the principal obligation,
- respect individuality of student to train according to his requirement,
- just and impartial dealing with students,
- sympathetic and courteous towards his students,
- hold inviolate confidential information regarding his st.
- refrain from imposing religious or political convictions,
- maintain co-operative relations,
- participate actively in the community life,
- refrain from becoming aligned from fractions in community,
- refrain from belittling in any way the community in which he has accepted a position,
- develop in the students respect for manual work and worker.

(b) Relation with associates:

- assist in determining and carrying out the policies of the institution,
- support associates in conversation particularly in matters of students and school discipline,
- accept full responsibility of what says and does,
- help associates with constructive advice and helpful ideas,
- give due credit for assistance received and achievements accomplished,
- assist associates to secure merited promotion,
- refrain from interfering in any way (unless official position warrants) in the school room affairs of an associate,
- hold inviolate confidential information regarding his associates,
- avoid gossip about or adverse criticism of fellow teachers,
- transact all business through proper channel,
- organise properly and leave for the successor such information,

(c) Relation to the profession:

- manifest genuine pride in the teaching profession,
- support and assist in raising the standards of entrance to the profession,
- broaden their educational equipment for teaching,
- affiliate actively with professional organisations
- work for material conditions necessary for a high degree of professional service.
- report to the proper authorities corrupt and dishonest practices known.

(d) Relation with commercial organisations:

- refrain from receiving commission or any thing else of value from firms, publishing houses etc., commercially interested in the school.
- refrain from writing general testimonials for canvass for salesman/firm.



(e) Relation to the nation:

- strive to develop the vocational education institution as a human resource development centre providing knowledge, skill and information needed for the area,
- try to fully utilise the resources available in the community/locality to improve vocational teaching-learning process,
- take particular interest in promoting vocational education.

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Appendix - II

A code of professional ethics for vocational teacher

Preamble

General

We the Vocational Teachers of <sup>Eastern</sup> India

1. Recognise the fundamental right of every child to be provided with the fullest possible and equal educational opportunities based on social justice without discrimination of grounds of religion, caste, creed, region, sex, social origin, political opinion or economic condition;
2. Reaffirm our resolve to strengthen, through education, national consciousness and identity, sense of patriotism, a pride in our rich cultural heritage and a determination to defend the unity and integrity of India;
3. Reiterate our firm belief in the fundamental principles of democracy, socialism, secularism and national integration enshrined in our constitution and rededicating ourselves to strengthen them through education.
4. Pledge to foster through education international understanding and world peace;

5. Commit to self direction and self discipline, resolve to adopt code of professional ethics and enforce it on ourselves voluntarily to practice our profession according to highest ethical standards.

#### Specific

1. Believe that Vocational Education should be directed to alround development of human personality and creative and productive abilities in our students for the intellectual, social, political, economic, scientific, moral and spiritual advancement of the country;
2. Require the Govt. should make sufficient financial allocation/that for providing the necessary infrastructure, equipments, supplies, adequate and qualified staff and all facilities and amenities conducive to improving vocational education, in an atmosphere of freedom and creativity;
3. Determine to organise teaching as a profession requiring specialised skills, expert knowledge and a sense of individual and collective responsibility for the welfare of the vocational students in our charge;
4. Co-operate with the head of the institution, the management and the educational administration in running the vocational courses according to the stipulated norms;
5. Not shirk responsibility and accountability to the vocational students, the institution, the community and nation as a whole.

## METHODS OF TEACHING: GENERAL

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Commerce education at plus two level has two faces - academic and vocational. It has to play a significant role as a diversified vocational stream. Its aim is preparing personnels for wide spectrum of job opportunities in industries, business, trade, transport, banking, insurance and Government offices. Vocationalisation of education at plus two stage has given a new dimension to turn the pass outs for gainful employment.

Teacher is a kingpin for education system. He should have mastery in subject matter and training in pedagogy. Any scheme of education will get success only when it is implemented by teacher in right spirit.

Successful teaching requires sound methods. In vocational education teacher should know learning of productive skills take place. He is having knowledge of content and skill and he has to pass out his knowledge of content as well as skill to learners through teaching Methods. There is difference between the methods used for academic or non-skill building subjects and skill building subjects. In skill building subjects we are concerned with correct techniques or correct way of performing the skill with accuracy and speed.

### Principles of good teaching

- a) Principle of planning in advance: There is need of complete plan for whole course supported by weekly and monthly plans for beginners there should be more emphasis for correct technique

and Drills and for others there is need of speed drills.

b) Principle of variety of techniques/Methods:

The teacher should avoid monotony by using different methods as per needs and teacher directed drills should be encouraged. If he uses only one method for a long time the student get bored.

c) Principle of motivation before teaching:

Before teaching he should seek mental and psychological preparation of learners

measurable results are essential for easy motivation.

d) Principle of correct technique: The teacher should develop correct habit or correct motion for a particular skill or operation e.g. correct typing posture is to be developed in students.

e) Principle of Demonstrated teaching: Demonstration has great role in learning specially for beginners. It is believed that one observation is equal to 100 times of description for learning a skill.

f) Principle of Individual Differences: The students have different nature, attitude, abilities etc. and the teacher should adjust methods/materials as per needs of students.

g) Principle of Co-operation Spirit: Develop respect for you in students with co-operative attitude. You should be quick to praise students success and eager to help in over coming difficulties of them. Teach rather than criticize.

There may be various methods of teaching, the teacher should judiciously combine various methods in order to make his work living and interesting. In vocational courses work oriented education is to be provided. Teacher's aim is imparting educational concepts, knowledge and develop certain skills. Some important methods which are generally used in teaching may be as under.

#### LECTURE METHOD

History of lecture method is a long and honorable one. It seems fashionable in some circles. It has many backlogs, but has been used with success in past and being used with success in present and will no doubt be used with success in future.

"Lecture is a teaching procedure in which there is one way of communication".

Teacher makes oral presentation of information, students listen silently and take notes. So, it is one way flow of ideas. There are doubts in usefulness of lectures in primary and secondary classes and there should be flexibility in lectures.

#### When, to use

- (a) For introducing a lesson
- (b) For motivating students
- (c) For pointing up important concepts.
- (d) For explaining difficult points
- (e) For summing up a lesson
- (f) For speedy cover of syllabus
- (g) For Adults
- (h) For a very large group

Before giving lecture explain how to be benefited with your lecture and develop art of taking notes. In secondary schools the duration of lectures should be short (Maximum 20 minutes). The short talks of ten minutes duration are more acceptable. The lecture should be well planned-what is to be said ? and how it is to be said ? The tone of language should be effective and language should be receiver's language but it does not mean that poor language should be used. Use illustrations and figures to make the lecture more clear but excess use of figures and illustration will harm.

#### Principles related to lecturer

- (a) Pure lectures or long formal lectures are criticised and unsuited.
- (b) Learning is an active process, within your lecture read reactions of learners and consider them in your lecture. If there is no reaction, it means learners do not have any interest and they have become inattentive.
- (c) Identify the type of procedure best suited to your subject. Identify student's needs, recognise them and reflect in your lecture.
- (d) Students are interested in the lecture specifically related to content already known and liked by them, attention varies as per your experience and communication ability.
- (e) Avoid too much lecturing.
- (f) Lecture is more suitable for subjects like english literature, History etc. but not for vocational subjects.

- (g) Good language, meaningful examples, good vocabulary, fluency etc. helps in students learning.
- (h) Be realistic in judging that how much class will get out of your lecture.

### Types of Lecture

- (A) Formal Lecture: Full period lecture without interruption is boring and it is out of place in typing or skill building classes. It is useless for below average students.
- (B) Illustrated Lectures: Some photographs, teaching aids etc. are shown in class and there will be lecture on them. There will be natural interest in students provided that the information is first hand.
- (C) Lecture with Demonstration: Teacher gives a demonstration (a showing some chemistry reaction), important concepts and observations are explained through lecture.
- (D) Reading from source Material: The teacher brings some material and reads it in classroom. It is useful only for short period.
- (E) Modified lecture with student participation: At the time of starting of lecture upto 15 minutes there will be high interest but it decreases. Then put some questions and involve student in your lecture and modify your lecture as per needs of listeners.

- (F) Informal lecture: It is just like talking, there will be active participation of students and they pose questions.
- (G) Informal brief explanation: For the ensure motivation in the class and explain as per class expectation with points on Black Board. Also answer individual questions be explaining the points.

Lec-ture making successful:

- (i) Prepare well and have mastery in the subject.
- (ii) Organise material thoroughly as per needs.
- (iii) Size up the class and motivate to get full attention.
- (iv) Encourage students to take notes.
- (v) Indicate relationship of one topic to other in your lecture.
- (vi) Consider individual differences in your lecture.
- (vii) Use that vocabulary which is understood by students.
- (viii) Speak clearly, fluently and ensure that everyone listens.
- (ix) Use teaching aids to clarify concepts.
- (x) Use meaningful illustrations.
- (xi) Emphasise important points in your lecture.
- (xii) Be sure that your lecture helps to achieve the objectives.
- (xiii) Avoid monotony in lecture and encourage students comments and questions.

Cautions

- (i) Do not use lecture method (in your teaching) too frequently.
- (ii) Do not assume that students have understood, but assure by questions.



- (iii) Do not introduce irrelevant ideas or material in your lecture.
- (iv) Do not extend your lecture beyond students attention span ( 10 to 20 minutes ).
- (v) Do not use lecture method just to cover syllabus rapidly.
- (vi) Do not spend more time on un-important aspects.
- (vii) Do not give lecture so speedily, so that students may not pick up.
- (viii) Do not use monotonous tone.
- (ix) Do not appear listless and bored in your lecture.

So, lecture method is to be used carefully in Secondary School teaching.

#### DEMONSTRATION METHOD

It is concerned with displaying or showing something to the class. Teacher gives demonstration and students see it.

"Demonstration is visual presentation of things, processes factor ideas to be learned".

Demonstration is a helpful instructional tool in the hands of knowledgeable teachers because:

- a) It provides sensory impact
- b) It is basically interesting
- c) It gives freedom from boring repetition of lectures.

#### Types of Demonstration

- a) Pure Demonstration: This involves full demonstration and minute observation of learners. Spoken words or comments during demonstration may cause missing of some important point. Teacher/Demonstrator should tell in advance that what students should look carefully and after completion, he should discuss.

- b) Demonstration with comments: Teacher demonstrates and insists students to observe and do the same, teacher gives comments-students practice and make procedures correct.
- c) Half Demonstration-Half Lecture: Teacher demonstrates and explains. In accountancy teacher balances the accounts on Blackboard and explains the students.
- d) Lecture with Demonstration: In shorthand class teacher gives dictation continuously at the time of dictating or afterwards he notices the errors in the methods of students and demonstrates correct method and then continues.

#### Principles related to demonstration

Demonstration has superiority over verbal expression but :

- i) Explain orally for understanding the demonstration
- ii) If there is need of minute observation avoid explanation in the middle of demonstration.
- iii) Students should have clear vision of your demonstration.
- iv) Practice the activity before demonstrating in the classroom.
- v) If purpose of Demonstration is explained in advance students learn better.
- vi) Explain technical terms (in advance) which you are going to use in your demonstration.

### Demonstration Making Successful

- a) Examine the object of lesson before demonstration and judge whether your demonstration suits the object.
- b) Practice before demonstration as much as you feel necessary to make demonstration effective.
- c) Ensure that all needed material will be available before demonstration.
- d) Be sure that all students can observe your demonstration. For this purpose semi-circle is suggested.
- e) Speak distinguishly and clearly so that students can listen and understand.
- f) Use vocabulary which is understood by all students.
- g) Do not assume that students have understood but ask questions to ensure it. And allow to ask.
- h) Face students at the time of demonstration, as much as possible.
- i) Employ good safety practices at the time of demonstration.
- j) Explain before demonstration that what you are going to demonstrate.

### Cautions

- a) Do not prolong the demonstration maximum suggested time is 25 minutes.
- b) Do not demonstrate so fast so that students do not grasp.
- c) Demonstrate only one concept in one demonstration.

- d) Do not give lengthy explanation in your demonstration.
- e) Do not use unfamiliar terms or explain the terms before demonstration.
- f) Never demonstration before trial run.

#### QUESTION ANSWER METHOD

In this method the teacher controls promotion of thought in student's minds through his questions and tries to achieve the desired goal. The questions should be related to subject matter and students should also be free to ask their doubts.

#### When to use

- (i) To stimulate analytical thoughts in students
- (ii) To diagnose student's difficulties in a subject/topic.
- (iii) To motivate for self thinking.
- (iv) To clarify and expand concepts.
- (v) To relate cause and effect relation.
- (vi) To encourage self evaluation in students.

#### Principles for Question Answer Method

- (i) Question Answer approach is only means but not end for assisting instructions.
- (ii) Apply this method only when students have some basic background of the topic.
- (iii) Prepare a sequence of questions to be asked in advance.
- (iv) Ensure that thinking of students develops in the desired direction.
- (v) Ensure participation of all students.

### Making Successful

- i) Use related questions which become progressively more difficult to acquire depth in a concept.
- ii) Ask questions for development of definite concept and ensure that students are able to answer from their own range of experiences.
- iii) Ask those questions which do not create any confusion in students.
- iv) Use simple language in your questions, without disturbing the real sense.
- v) Accept only those answers of students which are reasonable complete and meaningful.
- vi) If students do not answer with completeness and accuracy then ensure that class is not left for false concepts.
- vii) Use some portion of student's answers in your further questions to encourage them.
- viii) Establish such classroom climate in which students feel free to ask questions.
- ix) Allow time to the students for thoughtful answers.

### Cautions:

- i) Do not react emotionally if students fail to answer.
- ii) Do not ask, "Is there any question?, Have you understood ? But ask specific content to ensure.
- iii) Do not go out of planned subject matter in your questions.
- iv) Do not ask ambiguous questions
- v) Involve whole class in question-answer approach.
- vi) Do not bluff the students, if you are not sure of an answer but tell clearly, ' I do not know', and then find out and tell.
- vii) Encourage response of students.
- xiii) Use simple language in your questions.
- ix) Do not repeat questions.

Learning by doing becomes more effective. Under project method students are put under actual situations and they are giving definite working situation/problem to solve.

"Project is whole-hearted purposeful activity proceeding in a social environment".

"Project is a bit of real life that has been imparted into school".

"Project is considered to be a whole hearted purposeful activity carried to completion in its natural setting".

The purpose of project is to train a pupil for society.

#### Characteristics

- a) It is an attempt to have truest lesson in practical/actual life situations.
- b) Project is an opportunity to the student for self expression.
- c) Project is an activity to be performed by student by involvement of mental or physical power or both.
- d) Complete freedom of choice should be given to student.
- e) In project school becomes a workshop and student learns better with his own activity.

#### Types of Project

- (a) Producer type: In this student is required to produce or to build something tangible or render a service, e.g. development of garden, model of textile factory, gramophone, toy etc.

- (b) Consumer type: Learner gets experience by using some service in the actual life e.g. sending telegram, deposit or withdrawal of money from bank.
- (c) Problem type: A problem is posed to student and solution is to be found out by the student. But there is need of proper selection of problem for a student.
- (d) Drill type: An activity once performed is repeated again and again for mastery over it, e.g. singing, swimming, dancing etc.

The project is to be selected as per level of the child.

#### Essentials of a good project

- i) The project should stress present and future.
- ii) The project should provide the knowledge of subject.
- iii) The project should be challenging.
- iv) The project should be as per timely needs.
- v) There should be scope of flexibility in project.

#### Project Making Success

- i) Teacher should have good planning for projects. There should not be trial and errors.
- ii) Teacher should exercise guidance in selection of project by student it should have educational value to the student.
- iii) Teacher should ensure that the student should assume project whole heartedly.

- iv) Teacher should supervise during execution of project and should make on the spot corrections/modifications.
- v) There should be evaluation of project by student as well as teacher.

#### Caution

- i) Use project method as per availability of time, with regards to covering of syllabus in time.
- ii) Do not leave gap between student's knowledge
- iii) Project should not be beyond physical/mental/financial limits of students.
- iv) There should not be artificiality in project.
- v) Guide the students on the basis of your experience for project.

#### PROBLEM SOLVING METHOD

Students like problems and feel interest in solving them. This develops logic in students. Any problem is posed to class and its mental solution is emphasised. Eg. How can we make India self sufficient in food? Students develop various alternative solutions for the problem.

"Problem solving approach is meaningful, developmental, sequential and based on generalisation".

This method involves thought process, for mulstan of thoughts and their generalisation, which is useful in future. Problem solving has important contribution to teaching.



### Essentials

- (i) Problem may be as per needs and interest of students.
- (ii) Problem should be definite, clear, valuable and timely.
- (iii) Problem should impart functional and rich learning.
- (iv) Students should free problem as their own and should start thinking and they should be motivated.
- (v) When solution is found, once, state it clearly and use it for solving other problems.

### Major Approaches:

#### (A) Inductive or Developmental Approach:

In this approach proceed from particular to general and a universal truth is proved. Eg. total of three angles of a triangle will be equal to  $180^{\circ}$ . Different cases are given and it is proved and conclusion is drawn.

So, students develop logical understanding, rather than scrambling. There will be observation and actual participation but it will be more time consuming and at advance state it becomes difficult.

#### (B) Deductive, Authoritative or Non Developmental Approach:

A universal formula is announced for solving some problem. This approach proceeds from general to particular. Eg. For calculation of Area of a rectangle use  $\text{Area} = L \times B$ , different problems are given and students learn the calculation of area.

- Merits
- (i) Saving of time
  - (ii) Increase in memory of students
  - (iii) Gives more practice to students
  - (iv) Ensures speed and accuracy in learning.

- Demerits
- (i) Beginners do not understand and memorise blindly.
  - (ii) It becomes difficult to solve the problem in formula is forgotten by the learner.
  - (iii) No development of thinking in learners.

Suggestions

- (i) The problem should be realistic and should present some experience.
- (ii) The objectives of problem should be development of logical thinking in pupil as per his needs.
- (iii) In problem students should use his existing knowledge and should focus attention for unknown.
- (iv) Problem should adjust to a group as well as a student.
- (v) Problem should develop initiative and feeling of responsibility in himself.

Cautions

- (i) Do not use problem method frequently.
- (ii) Pupil can start over-estimating themselves.

Some other Methods

- (a) TEXT BOOK METHOD: Some times text-book may be used as a base for teaching.

"Text book is a systematic arrangement of subject matter designed to assist the instructor in teaching a particular content at a specific grade or level".

Textbook is not a self directed learning material, it gives direction and control's students thinking or behaviour. It also allows individual differences. Do not forgo planning for textbook. Always try to select a good textbook and use it in best manner. The quantity of use of textbook depends on nature of subject in typing class there will be more use of textbook but in physical education the use of textbook will be rare or less.

- (b) Discussion Method: A topic is given in advance to the students to prepare and discuss on a particular day. The topic should be as per level of competence of students to train them further. Every students active role in discussion is to be ensured. The teacher is also needed to play active role, he should organize discussion and should ensure that it should not go beyond limits.
- (c) Guest Speakers: The teacher can invite some experienced persons from business houses, banks, insurance corporation etc. to give a talk on a particular topic. Students will be benefited with practical experience of the experts. They will get actual job information, some demonstration, illustration may be used by experts to simulate and motivate. The experts can be invited in Commerce Club/forum/association/Council. The topic should be announced to students also, so that they can raise their problems.
- (d) Field Trips: After proper thinking of usefulness of a particular place, field trips can be organised. But before deciding place ensure:

- (i) Student can see living examples.
  - (ii) There should be increased understanding in field trip rather than reading and discussion.
  - (iii) There should be co-ordination of theory and practice through field trip.
  - (iv) Students should learn more with the direct contact of those persons who are at actual work situations.
- (e) Apprenticeship Method: It is an old method for providing skill trainings. Training programme is organised as per future needs with actual participation in work under direct supervision of Supervisor/Expert.
- (f) Practice Set Method: It is useful method for imparting instructions in Book keeping and Accounting.

"A Practice Set consists of original business papers relating to a particular job".

Practice set is to be used after completion of every unit. Most frequently used transaction are identified. Vouchers of those transactions are prepared with sufficient number of copies. On the basis of those vouchers students record transactions. They may be instructed not to write anything on vouchers and vouchers can be re-used. Brief instructions should be given in beginning of practice set and at the end there should be answer.

- (g) Assignment Method: Whole course is divided in number of portions and one portion/topic is allotted to student as assignment for a week/month. Students complete assignments and learn something. Keep systematic record of progress.

- (h) Roleplaying Method: This method successfully applies to co-relate theory with actual practices. Different students are allotted their roles for a situation. The trainee is exposed to the artificial situation through roleplaying method. On the basis of his reactions training is provided. It is more applicable for B.Ed. Training.
- (i) Bulletin Boards: Use for showing collected materials in the form of pictures, maps, charts diagrams etc. Some teaching aids may be so small that they can not be shown to whole class in a less time, such teaching aids can be put on the bulletin boards. But do not fill bulletin board with unnecessary material, display material of permanent importance on the board and maintain them with up-to-date information.
- (j) Tape Recorder: Some important radio talks, or lectures of experts or speeches of learned persons can be recorded and presented to class. It is a costly methods, so can be used only by big organisation/ institutions. Any one method may not suit the topic/ subject. The teacher has to combine different methods as per circumstances.

Essential requirements for well-delivered lesson

- (i) There is need of well planning before delivering a lesson. Lesson notes with recent knowledge should be developed to generate confidence.
- (ii) The lesson should be delivered as per pre-decided objectives.
- (iii) Appropriate teaching aids should be used for every lesson, which should be visible to whole class.

- (iv) Before delivering lesson ensure that all students are well seated, there is proper ventilation, clean Blackboard, and there should be no physical factor to disturb the class.
- (v) An interesting introduction should be given before starting lesson, for 40 minutes period there should be interesting introduction of 5 to 7 minutes.
- (vi) Write the topic on Blackboard and develop blackboard summary.
- (vii) Involve all student's in your lesson and try to seek their active co-operation. Adopt right method.
- (viii) Hand writing on blackboard should be systematic and legible.
- (ix) At the end of the period, revise all points in 3-4 minutes.
- (x) The questions put to the class should be definite, clear, stimulating, and well distributed on whole class.
- (xi) Allow time to students to get their doubts cleared.
- (xii) Try to co-relate your subject with actual life situations.
- (xiii) Do not teach in hurry, provide time as per need of the lesson.
- (xiv) Pay individual attention for each student as fast as possible, specially back benchers.
- (xv) Be natural in class, do not stand like statue and do not move too much, do not put hands in pocket or lean on table/chair and do not play with chalk.

- (xvi) Ensure your neat and tidy work habits specially for Blackboard work, correction, checking of Assignment etc.
- (xvii) Always object students defective reading/writing/ sitting or standing postures.
- (xviii) You should have adequate command on your language. The language should be clear and economical.
- (xix) Give assignment after every lesson. For skill lessons, skill should be under your supervision.
- (xx) Maintain proper discipline in your class. Weld the differences of different sections/groups/sexes in your class and develop healthy competition and co-operation in your class through your intellectual, moral, emotional, creative and responsible thinking.
- (xxi) Do not be too rigid for plan. Allow deviation from plan as per class situations.





Case study approach for teaching  
Crossing of a cheque - a Project

Dr.R.N.Dikshit

Objectives: Students shall be able to :

1. explain the implication of crossing of a cheque;
2. explain the advantages of crossing of a cheque;
3. cross a cheque in real life situation;
4. advise the persons who else can cross a cheque;
5. transfer a crossed cheque in favour of a third person;
6. restrict the further transfer of a crossed cheque;
7. distinguish a generally crossed cheque from a specially crossed cheque;
8. develop the skill of crossing a cheque both "general" and "special" and,
9. explain the parties to be responsible in case a transferred and crossed cheque is dishonoured.

Previous knowledge and Skill: The pupils have seen a cheque. They have used both a bearer cheque and an order cheque. They can also write a cheque.

Introduction: A cheque may or may not be crossed. A cheque may be crossed by drawing two transverse lines on its face. One of the following words may or may not be mentioned between the parallel lines.

& Co.

Account Payee

Not Negotiable

And Company

Payee's Account

Given below is a specimen of crossed cheque collected by Mr. Ajay.

STATE BANK OF INDIA  
BHUBANESWAR

No. SB 4536  
CA

Dated the .....

Pay Ajay Prasad Kar or bearer  
a sum of Rs. Five hundred only.

Rs. 500=00

Signature.....  
Account No. 670/4

Case I (Implication of crossing)

Mr. Ajay had never seen a crossed cheque. He is now perturbed on receiving such a cheque. How will you advise him that there is nothing to be worried about?

Case II (Advantages of crossing)

Mr. Ajay does not see any reason as to why a cheque should at all be crossed. How will you convince Mr. Ajay?

Case III (Persons entitled to cross)

Mr. Ajay has now been convinced that a cheque should be crossed. But he does not know as to who is the right person to cross the cheque. Can only Kailash cross the cheque? Who else can cross the cheque?

Case IV (Encashing of a crossed cheque)

Mr. Ajay wants to encash the above cheque. He does not have any account in the State Bank of India, Bhubaneswar. Explain the procedure to encash the above.

Case V (Transfer of a crossed cheque)

Mr. Ajay is in debt to Mr. Ramesh for a sum of Rs. 500/-. The former wants to pay back the same by transferring the above cheque. Can he do so? How can he do?

Case VI (Number of transfer)

Mr. Ajay transfers the above crossed cheque in favour of Mr. Ramesh. Can the latter transfer the same again in favour of Jadav? How many similar transfers are allowed?

Case VII (Restriction on transfer)

Mr. Ajay transfers the above crossed cheque in favour of Mr. Ramesh. The former does not like that the latter should make further transfer. How can Mr. Ajay restrict further transfer of the cheque?

Case VIII (Dishonouring of a crossed cheque)

Mr. Ajay transfers the cheque in favour of Mr. Ramesh and the latter again transfers in favour of Mr. Prahallad. The bank refuses to credit the account of Mr. Prahallad on the ground that Mr. Kailash (i.e. the drawer) has only a sum of Rs.100/- in his account.

Who is the person or persons responsible for this dishonour?

Will the fixing of responsibility differ in case:

- a. the word "& Co" is written between the lines?
- b. the words "Account Payee" is written between the lines?
- c. the words "Not Negotiable" is written between the lines?

Case IX (Special crossing)

Mr. Ajay receives the above crossed cheque drawn upon the State Bank of India, Bhubaneswar. He has however, an account with the United Commercial Bank, Bhubaneswar.

Advise Mr. Ajay as to how the amount of the cheque can be realised.

Discussion

If you go through the above cases carefully, you will notice the following:

1. Teaching any topic through cases necessitates an introduction at the beginning. That has been the superstructure upon which the cases are built upon.
2. The cases are arranged in the order of simple to complex. This is how it conforms to one of the principles of learning.
3. The sequence of cases are corollary i.e. one case follows the preceding one and so on. The solving of one case helps in understanding and solving the subsequent cases.
4. Each case deals with only one problem or with similar problems at a time.
5. Unlike the languages used in the text-book, no technical words are used in the cases.
6. Each case deals with one particular aspect of the topic.

Assignment

Mr. Keshab can write a cheque but he does not know any thing of a crossed cheque. You are asked to advise him who has the following queries:

1. What is a crossed cheque ?
2. Why is a cheque crossed ?
3. Who can cross a cheque?
4. Can a crossed cheque immediately be encashed?
5. Can a crossed cheque be endorsed in favour of a creditor?
6. How many times a crossed cheque can be transferred?
7. Who can further transfer be restricted on a crossed cheque?
8. What is special crossing?
9. What are the circumstances under which a cheque can be crossed specially?
10. How special crossing is done?
11. How do you distinguish a general crossing from a special crossing?
12. Transfer the following cheque in favour of Raghava Rao; and also cross the cheque.

....5/-

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UNITED COMMERCIAL BANK OF INDIA  
BHUBANESWAR

No. UCO 5436  
Dtd. 5.4.1983

Pay Ramani & Co. or bearer a sum of Rs. Five  
Hundred only.

Rs. 500/-

Signature: K.C. Patra  
A/c No. 576

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STATE BANK OF INDIA  
BHUBANESWAR

No. SB 4536  
CA  
Dated the .....

Pay .....Or bearer  
a sum of Rs. ....only.

Rs. ....

Signature .....  
Account No. ....

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## TEACHING FINAL ACCOUNTS THROUGH THE WORKSHEET

Dr. R.N. Dikshit

The Gestalt School of Psychology is always in favour of whose learning. Teaching worksheet fulfils the requirement of the above school. Worksheet is one of the accounting devices to teach the final accounts in a summarised form. A well planned paper sheet is required to work out the entire final accounts. The worksheet may be introduced at the following three stages viz.,

- a) At the time of teaching Book-keeping through Equation Approach.
- b) During the period of teaching final accounts, and
- c) After the teaching of final accounts.

### a. Introduction of worksheet at the introductory stage:

The Book-keeping Equation Approach and analysis of changes can very well be taught through the worksheet. The teaching of Book-keeping and the introduction of the worksheet involves the following few steps viz.,

- i) Definition of elements of Book-keeping such as assets, liabilities and proprietorship.
- ii) Meaning of a transaction.
- iii) Changes to be recorded before imparting the idea of a double-concept of Book-keeping.
- iv) Development of skill of Equation through the changes of Book-keeping elements on the worksheet.

Types of accounts, and more and more of problems may be introduced in course of time. An example of introducing the worksheet at the introductory stage can be found in appendix-A.

### b. Introducing the worksheet during the period of teaching the final accounts: 1

The worksheet may also be introduced at the time of teaching the final accounts and after the teaching of Trial Balance. The following order of teaching may be followed for the purpose.

- i) Introduce the simple worksheet at the beginning without adjustment.
- ii) Teach the adjustment entries before the worksheet with adjustment is introduced.
- iii) Introduce the Ten-column worksheet which take care of all adjustments like the inventories, recording of accrued and deferred items.

c. Introducing the worksheet after the teaching of final accounts:2

The ten-column worksheet may be presented after the students are exposed to the preparation of final adjustment entries. It involves the following procedure and steps viz.,

- i) Write down the entire Trial Balance.
- ii) Prepare the adjusted Trial Balance after taking due care of the adjustment entries.
- iii) Provide separate columns for Trading Account, P & L account and Balance sheet.
- iv) Transfer the amounts of the adjusted Trial Balance to their respective columns.
- v) Now add the figures of each column.
- vi) An extra sheet may be fastened, if the problem is too big.

Teaching suggestions:

The following teaching suggestions should be borne in mind while introducing the worksheet in the class<sup>3</sup>.

1. Plan your teaching materials in advance. Write down the Trial Balance and make the necessary ruling on the Blackboard before the class commences.

2. Supply each student a copy of the worksheet along with the ruling done on it. The worksheet should contain the Trial Balance ready for solution on the blackboard.

3. All the columns of the worksheet may not be presented at one time. Six-column worksheet may be presented to the beginner where the emphasis is on the classification of accounts. Presentation of the Tenth-column worksheet should follow the teaching of the Eight-column worksheet.

4. Round numbers should be used in the Trial Balance and adjustments as our objective is to introduce the worksheet and not the arithmetic work. This will ensure confidence in the children to work on worksheet.

5. Encourage the students to work out the problem on the supplied worksheet alongwith the teacher.



6. Allow the students to use a pencil instead of a pen. Because the worksheet is exactly what its name implies, a working sheet or a working Trial Balance. It is very often a preliminary calculation prior to the actual preparation of the final accounts in a presentable form.

7. Ensure that each item appearing in the adjusted Trial Balance appears once and only once in one of the six columns to the right of the adjusted Trial Balance.

8. Ensure that each item of the Trial Balance or the adjusted Trial Balance is transferred to respective column.

9. Provide enough space in the Trial Balance to accommodate opening of new assets and liabilities accounts.

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#### APPENDIX - A

##### General Store, Bhubaneswar

Liabilities+ Capital				Assets		
	Creditors	Capital	Retained earnings	Cash	Store	Typewriter
a) Started a business with cash Rs.25,000/-		*25,000		+25,000		
b) Purchased goods worth Rs.10,000/-				-10,000	+10,000	
c) Sold the above goods for Rs.15,000/-			+5,000	+15,000	-10,000	
d) Paid wages worth Rs.2,500/-			-2,500	-2,500		
e) Bought a type writer for Rs.3,000 from X on credit.						+3,000
	3,000	25,000	2,500	27,500		3,000
		30,500			30,500	

	Trial Balance	Adjusted Trial Balance	Trading A/c	P & L a/c	Balancesheet
	Dr.amount	Cr.amount	Dr.Amount	Cr.amount	Dr.
Opening Stock	30,000		30,000		30,000
Purchases	40,000		40,000		40,000
Sales		1,00,000		1,00,000	
Freight & Wages(b)	4,000		3,500		3,500
Salaries (c)	15,000		16,500		16,500
Machinery	50,000		50,000		50,000
Discount	500		500		500
Buildings(d)	1,00,000		95,000		95,000
Capital		80,000		80,000	
Premiums	2,000		2,000		2,000
Cash	8,500		8,500		8,500
Creditors		70,000		70,000	
Closing stock (a)			20,000		20,000
Prepaid wages(b)			500		500
p/s Salaries (c)				1,500	
depreciation (d)			5,000		5,000
Gross Profit					46,500
Net Profit					22,500
	2,50,000	2,50,000	2,71,500	2,71,500	1,20,000
Adjustments	(a) Closing stock Rs.20,000/-				1,200,000
	(b) Wages prepaid Rs. 500/-				46,500
	(c) Salaries outstanding Rs.1,500/-				46,500
	(d) Depreciate bldgs. @ 5% p.a.				1,74,000
					1,74,000

## NOTE SHEET

Dr. R.N. Dikshit

Objectives: On completion of the Chapter, the students should be able to:

- a) Explain the meaning of 'noting' on a notesheet,
- b) Describe the needs of noting,
- c) Recognize a note-sheet,
- d) Distinguish a note-sheet from an ordinary sheet,
- e) Recall the points to be kept in mind while writing a note,
- f) Critically analyse the uses of a note-sheet.

Meaning: Generally a file has two parts. The right-hand side of the file contains letters received and replies sent. The left portion contains the written view points of the dealing assistant, supervisor and officer. Noting, as such, is the view points of the dealing assistant seeking the approval of his higher authority. Such a note is written on a thick lightly coloured paper and then submitted by the dealing assistant through the supervisor to the officer. The supervisor may be any one like the Head Assistant or the Section Officer of the Office Superintendent.

Needs: A note is prepared for the following purposes:

(a) Avoidance of confusion: It facilitates to take a concrete decision. This avoids any confusion between the dealing assistant the officer, because the suggestion of the dealing assistant is either approved or disapproved by the officer.

(b) Quick decision: The dealing assistant usually submits the notes by quoting the relevant rules and regulation, and precedent if there is any. This helps the officer to take a decision quickly.

(c) Sharing of responsibility: The dealing assistant usually submits the note to the officer through his immediate boss. The immediate boss may be either the Head Assistant, or the Head Clerk or the Office Superintendent. The latter does not make any change in the prepared note. He may however, supply further information and may subscribe his own view points separately. Lastly the note goes to the officer for approval. This is how the dealing assistant and the intermediate supervisor becomes a part in the process of making a decision. Each one shares the responsibility at different stages. This also gives a sense of pride and develops the spirit of co-operativeness in the proper functioning of the organisation.

(d) Training opportunities: This serves as a training ground for the new incumbents in taking decision and sharing the responsibility. This may also help them in undertaking larger responsibility in future and they may think of promotion or better job avenues. The old notings also help the newly entrants to prepare similar note for the day to day present jobs.

(e) Initiation of a note: Each file takes care of a particular subject. A note is a part of the file. This is how initiating a note helps build a file.

(f) Continuance of the work: The past notes left by the predecessors help the present incumbent to follow the line of action or procedure.

(g) Serves as a record: In case of dispute, the past note may be produced as an evidence. It may also help in future reference.

salient feature of a note-sheet: (a) The correspondence file has two parts. One part is meant for noting and the other part for drafting the letters. A thick light coloured paper is used for noting.

(b) The note is usually brief and may contain several paras. The first para deals with the needs of submitting the note and reference of the past note and reference of the past note or gist of any letter received during the period is also mentioned.

(c) The name of the institution is usually printed at the top of the note-sheet. This is followed by mentioning the number of file, the year and the name of the department or section in short. This helps know from where and when the file is submitted. Subject of the noting is mentioned subsequently. The subject matter is placed forth para wise and each para is consecutively numbered.

(d) The note is prepared in reporting style in simple language.

(e) The subsequent para may quote the necessary rules, provisions or customs in use.

(f) The person preparing the note at the end may suggest or recommend or seek the approval of the authority. He makes his initial at the end with date and writes his designation.

(g) Certain common expressions used by the dealing assistants may be carefully observed. They are:

.....may please be perused  
(at the beginning of the note)

.....submitted for kind approval.  
(at the end of the note)

.....may please be approved.  
(at the end of the note)

(h) However, no notesheet is prepared for standing instructions. Each page of the note is consecutively numbered.

(i) The file is routed from lower authority to higher authority and returns back in the same order.

Limitation: Despite so much usefulness of a note sheet, it is not without criticism. A note sheet is initiated by the dealing assistant and passes through the proper channel. This process may take an unusually long time and the parties involved in the case may be adversely affected during the period. The assistant or the supervisor may influence the officer through the noting. This is not a healthy sign in the proper functioning of the bureaucracy.

During the British regime, the foreigners had no faith in the natives. Therefore they were insisting everything to be put in black and white. The use of 'note' is thus a British legacy. The modern managers in private undertakings, however, have already dispensed with this system.

The noting system however, continued even after the achievement of independence. Transfer of both the assistants and the officers is frequent in many organisations. There is also change of party-based government. Noting as a part of the file is being used, as such, as a record, a reference and an evidence in Govt. offices.

#### A\_s\_s\_i\_g\_n\_m\_e\_n\_t

1. What is 'noting'? What are the purposes of noting?
2. What are the points to be kept in mind while writing a note?

3. Are you in favour of the system of writing a note ? Explain with justifications.
4. Explain the advantages and disadvantages of writing a note.
5. Answer the following in not more than two short sentences each:
  - a) Who is to initiate a note ?
  - b) Mention any two purposes of noting.
  - c) Describe a note sheet.
  - d) How do you distinguish a note sheet from an ordinary sheet ?
  - e) Mention any two common expressions in a notesheet.

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## SUBMISSION OF A NOTE

Dr. R.N. Dikshit

Objectives: On completion of this Chapter, students should be able to:

- a) Initiate noting,
- b) Prepare a note,
- c) Submit a written note sheet,
- d) Preserve the note for further reference.

Introduction: The dealing assistant should have a clear understanding as to why he is going to write a note. He should have necessary material for the purpose. The note may be either handwritten or typed. It should be brief and in a summarised form.

### Materials required:

- a) Notesheet/s for writing,
- b) Old noting for guidance/reference
- c) Relevant/related file.
- d) File board
- e) Writing materials.
- f) Pen/typewriter.

Procedure: The following steps may be followed:

1. Take out a note sheet.
2. Write the number of the file, year and name of the department or section in brief.
3. Mention the subject in brief.
4. Write the reference of the letter, quotation, or requisition received along with their number and date/s.
5. Prepare the note in a reporting style in simple language para-wise.
6. The first para should contain the purpose of writing the note.
7. The subsequent paras should quote the necessary rules, provisions or customs in use.

8. Lastly suggest/recommend/seek the approval of the authority.
9. Put your initial, date and the designation at the end closed to the left-hand margin.
10. Just below the line and to the right of your initial and date, write the designation of your immediate boss (i.e. the supervisor) for his remarks.
11. On receiving the note, the immediate higher authority may dispose the file by approving/disapproving the note/seeking further advice of his higher authority. The immediate higher authority strikes his own designation marked and initial at the end after his remarks. If the officer agrees with the note, he may simply initial and may return the same.
12. The file returns in the order it is submitted. The dealing assistant takes action on the officer's remarks/decision/approval. Each page of the note is consecutively numbered and thus it forms a part of the subject file. All the notes of a particular subject may be preserved in one file and copies of the letters written to the concerned parties may be kept in another file. In some of the offices the practice is to keep all the notes to the left of the file and the draft of the letters to the right of the file.

Precautions: (a) The dealing assistant, supervisor and the officer must put their initials with dates only. So that the responsibility may be fixed in case of unnecessary delaying the movement of the file.

(b) No portion of the note sheet is to be left blank. If any portion is left blank, the same is to be crossed and signed. This prevents from doing any mischief. - -

(c) There must not be any pasting on the note sheet. This may indicate some mischiefs on the part of the dealing assistant.

(d) It should never be written by pencil.

Example: Read the following case carefully and observe as to how a note has been (a) prepared by the dealing assistant, (b) submitted to the Head Assistant, (c) approved by the officer.

Mr. Sarat works as a dealing assistant in the Directorate of Correspondence Course-cum-Contact Programme in the Utkal University, Bhubaneswar, Orissa. Ten students have failed to submit the assignments. Should the Director invite all the students including the above ten students to the forthcoming contact programme? Mr. Sarat seeks the approval for the above.

DIRECTORATE OF CORRESPONDENCE-CUM-CONTACT COURSES,  
UTKAL UNIVERSITY, VANI VIHAR, BHUBANESWAR,  
ORISSA

F. 1/1/BEd/90 Dated the 5th January, 1990.

Sub:- Non-submission of assignments.

Ten students bearing the following roll number have failed to submit their assignments during the last calendar year, 1989.

2389, 3456, 4897, 4898, 5672, 5674, 5679,  
6180, 6700, 6883.

Last year the students who failed to submit the assignments were not invited to the contact programme. The next B.Ed. Contact Programme will start from 1st February, 90 to 15 February, 90. Now decision may please be taken as to whether this nonsubmission of assignments will debar them from attending the ensuing B.Ed. Contact Programme.

Sd/-  
Dealing Asst.

Sd/-  
Head Asst.

Sd/-  
Prog. Director

The students in question will attend the programme with their assignments. If not, their cases will not be entertained. Inform them accordingly.

M.K. Mishra

### A s s i g n m e n t

1. Explain the procedure of submitting a written notesheet.
2. Describe the practice of submitting a note by a dealing assistant and approving the same by the officer.
3. What are the contents in the format of a note ?
4. How is a written note-sheet preserved?
5. Given below are the cases for preparing notes and getting the approval of the authorities. Write the notes and officer's remarks.

(a) The recent price rise in petrol will cause payment of Rs.30,000 as against the sanctioned amount of Rs.25,000/- under the head 'fuel'. The dealing assistant submits a note through the Head Assistant for Rs.5,000/- more fund in the revised budget of the year. The Head Assistant, however, suggests for cutting short in the purchase of stationery to the extent of Rs.5,000/- and diverts the same towards fuel consumption. The officer agrees to the Head Assistant's proposal.

(b) The Head assistant is not satisfied with the typist as the letter is leaking out the secrecy of the office. The former submits a note for immediate transfer of the typist. The Officer, however, directs to issue a confidential memo.

(c) The DPI has permitted the Headmaster to start plus two courses. As the headmaster and Secretary of your village school, prepare a suitable note to be placed before the Management Committee. Suggest for (i) introduction of plus two course in Arts and Commerce, (b) fees to be charged for the above course, (iii) arranging the classes in the morning shift, (iv) requirement of teachers subjectwise, their qualification and pay scale etc.

Hints- The members of the management committee will make their initials in one horizontal line.

6. Answer the following questions in not more than two short sentences each:
  - a) Write the precautions to be taken by the dealing assistant while submitting a note.

- b) Enumerate the materials required to prepare a note.
- c) What does the Section Officer do after a note is submitted to him by the Dealing Assistant?
- d) What does the officer do after a note is submitted to him by the Section Officer?

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## TEACHING APPROACHES IN BOOK KEEPING

Dr.R.N.Kikshit

The dictionary meaning of "approach" is "means of access". How does a new learner enter into the area of Book-keeping ? The Accounting teacher helps the learners to enter into the field of book-keeping through one of the various approaches. The traditional teachers in Book-keeping usually follow the journal approach. This approach takes care of the opening journal entries by posting into Ledger, preparing a Trial Balance and final accounts. At the end closing entries are done. Teaching Book-keeping through traditional approach has been challenged by the modern book-keeping teachers. The modern book-keeping teachers have devised approaches with wider acceptance in the multipurpose and vocational schools in the U.S.A.

The expert teachers in Book-keeping advocate as many as twenty approaches. Few important approaches to teach Book-keeping are:

1. Journal approach
2. Ledger approach
3. Equation approach/Balancesheet approach
4. The Repetitive cash transaction approach.
5. The Repetitive non-cash transaction approach.
6. Procedural approach
7. The 'How' and 'Why' approach.
8. Spiral Development approach.
9. The Arithmetic approach.

1. Journal approach follows the traditional Book-keeping cycle of teaching the journal entries on the basis of golden rules. This approach has found very much favour with our traditional teachers. Books are also found in plenty which have followed this approach.

The students do not understand the direction until the final accounts are prepared. Transactions are repetitive. The students are asked to memorise the golden rules. The teacher does not explain as to how these rules have been arrived at. Students express this approach of teaching to be disinteresting and full of boredom.

2. Ledger approach of teaching Book-keeping follows the following step:

- (a) Meaning of an account.
- (b) Account heads in relation to assets, capital, income, expenditure and liabilities.
- (c) The two sides of an account head - debit and credit.
- (d) T form of an account
- (e) Ruling of a Ledger page
- (f) Introducing the personal accounts and posting the entries under different columns of the individual personal accounting heads.

Note:- Students are acquainted with the word debtor and creditor. So the introducing debit and credit side creates no confusion.

- (g) Introducing the nominal accounts and posting the entries under different columns of the individual nominal accounting heads.

Note:- Students are explained that credits are given for all incomes and gains. Similarly debits are given for all expenses and losses.

- (h) Introducing the real accounts which always increase in left (Debit) and decrease in right (credit).
- (i) Explain the increase and decrease effect under every accounting head.
- (j) Analyse a transaction and explain the double aspects of every transaction.
- (k) Now teach journal
- (l) Balancing
- (m) Trial Balance.
- (n) Final accounts.



Many of the small business houses do not prepare the journal entries. They directly post the entries into ledger columns. Instead of following T form accounting. They follow the horizontal presentation of the ledger page.

It is practical and fulfils the arguments of procedural fulfilment. But books on this approach are not available as text books.

3. Equation approach: This approach has been popular in the commerce classes in the U.S.<sup>4</sup>. According to the Gestalt school of psychologists the whole should be taught first and then the parts be taught. This equation approach fulfils the basic idea of Gestalt school. Accordingly the Balance sheet is taught first. Sometimes it is also therefore known as Balance-sheet approach. Some of the authors have differentiated the Balance sheet approach from the Equation approach. According to the advocates of equation approach of teaching Book-keeping the equation of  $\text{Assets} = \text{Capital} + \text{Liabilities}$  assumes importance. On the otherhand, in the Balance Sheet approach the explanation of the basic elements of Book-keeping i.e. assets, liabilities and capital assumes precedence over others and the concept of the equation follows the explaining of the basic elements. Thus the difference is a matter of emphasis only.

The following steps are followed in introducing Book-keeping through this approach.

- (a) Explaining the basic elements of Book-keeping viz., Assets, liabilities and capital.
- (b)  $\text{Assets} = \text{Liabilities} + \text{Capital}$

- (c) Analysis of a transaction
- (d) Every transaction brings a change in the equation of  $A = L + C$ ,
- (e) Expenses and income are parts of capital.
- (f) Changes occur in the equation because of transactions.
- (g) Emphasis on any two changes in the accounts of assets, liabilities, and capital (income and expenses)
- (h) Changes in accounts - demonstration and practices.
- (i) Golden rules through the increases and decreases in the basic elements of Book-keeping.
- (j) Journal entries.
- (k) Trial Balances
- (l) Final accounts

The equation approach is more practical and discourages memorizing the golden rules. Books are available on this approach which may be conveniently prescribed as text book. The traditional teachers in Book-keeping may oppose to this approach, because it is new and the teachers may hesitate to switch over.

4. The repetitive, cash transaction approach  
here teaching proceeds in the following order;

- (a) Necessity of a Cash Book.
- (b) Preparing simple cash book.
- (c) Relating the receipt items (i.e. debit) with the corresponding item (credit)
- (d) Showing the 'e' in the T form account.
- (e) The repetitive credit transactions are introduced as above i.e. 'b' to 'd'.
- (f) Balancing
- (g) Trial Balance
- (h) Final accounts

As books are not available purely in this approach, it serves the purpose of an academic exercise only.

5. The Repetitive Non-cash transaction approach

The teaching in this approach may be done in the following order:

- a) Explaining the repetitive Non-cash transactions and grouping them as purchases, sales, purchase returns, sales returns etc.
- b) Preparing the books one after another.
- c) Relating the items (debit or credit) with the corresponding items (debit or credit).
- d) Showing the 'C' in the T form account.
- e) The repetitive cash transactions are introduced as above i.e. 'a' to 'd'.
- f) Balancing
- g) Preparing the Trial Balance
- h) Final accounts

As books are not available purely on this approach, it may serve the purpose of an academic exercise only.

6. Procedural approach is followed in the short-term courses for inservice employees where the main task is to train the employees in the procedure. The training of cashiers in the commercial banking institutions are trained as to how the cash Receipt journal and cash payment journal are prepared. After imparting intensive training on the procedure for which they are appointed, extensive teaching is given subsequently. At this stage they relate training in parts of a transaction.

7. The 'How' and 'Why' approach of teaching Book-keeping come into prominence because of the emphasis on short-term courses for the inservice employees. The procedural approach is always in favour of the 'How' of the recording of transactions. It does not explain the double-effect of a transaction i.e. why a particular item is debited and the corresponding item is credited.

But for a further understanding of the effects of a transaction, the 'Why' of debiting an item and crediting of a corresponding item must be explained. The traditional teachers of Book-keeping have been giving more emphasis on this 'Why' aspect. The vocational accounting teachers' emphasis is on the 'How' aspect.

In fact, both the 'how' and 'why' aspects of Book-keeping should receive equal emphasis.

8. Spiral Development Approach assumes that the training of Book-keeping is highly technical. Therefore, teaching of Book-keeping topics should proceed from teaching simple concept, to complex concept and known to unknown practices.

Example: Concept of gross profit working out in trading account may be given in the following order.

- a) Gross profit of a trader who simply buys and sells without any opening or closing stock.
- b) Gross profit of a trader with opening stock.
- c) Gross profit of a trader with opening and closing stock.
- d) Gross profit of a manufacturer.
- e) Gross profit of a farm house.
- f) Gross profit of a partnership firm and so on.

This approach should be followed both by a traditional book-keeping teacher and modern book-keeping teacher to make the teaching effective. Moreover, this approach is quite suitable for students of below average and average intelligence.

7 10. The Arithmetic Approach of teaching Book-keeping may be followed in the institutions where students do not have the prior knowledge of Book-keeping but are to be trained. M.B.A. students are enrolled from different disciplines and many of them have no book-keeping knowledge. It is easy to teach Book-keeping through this approach to such students.

Gross profit is worked out through simple arithmetic of (Selling price + closing stock) - ( Purchases + opening stock).

At +2 vocational courses many of the topics like consignment, income and expenditure account and other revenue accounts may be taught through this approach effectively.

An efficient teacher in Book-keeping may follow one or more approaches successfully.

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## USE OF COMPUTERS IN BUSINESS EDUCATION

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Computers play an important role in almost every aspect of human activity. A computer is, perhaps, the only device that has such diverse applications. Scientists make use of it to solve their complex research problems, doctors find it useful in diagnosis and businessmen use it as information machine. Teachers can also use computers to enhance the learning speed of students.

Computers are gaining popularity due to their following features:

- (a) Mass storage: A computer can store voluminous data and reproduce any part of it, as and when required. The storage of data is ordinarily done on magnetic tape or magnetic disks. The density of recording on this medium is so high that millions of transactions of an enterprise can be recorded on a disk.
- (b) Speed: Computers are known for the incredibly high speed of operations. The speed of processing data on micro computer is ordinarily expressed in micro seconds (  $1/10,00,000$  seconds) although there are computers that can perform one operation in even less time. In other words computers can perform millions of operations in seconds.
- (c) Stored Program: A computer is capable of storing a set of instructions and executing them one by one. It performs various operations automatically. The facility to store a set of

instructions for computer is known as 'Computer Program' which enables the computer to switch over from one instruction to another without human intervention. This increases the speed of operations.

- (d) Accuracy: Computers are extremely accurate in their operation. In fact, while designing the computer, the utmost care is taken to ensure error free operation.

The accuracy in operation lends reliability to the information generated by the computer. Correctness of the data and instructions fed to computer is necessary for reliability of the information generated through computers. Error in the operation of the machine is very rare and, thus, the computer is considered to be quite accurate.

- (e) Versatile: A computer can perform in different work situation. Computers are multipurpose information machines. Same machine can be used for different types of activities. It is possible due to computer's capability to accept and work according to computer programs. It can switch over from one programme to another depending upon the instructions given to it.

The Computer and its associated devices (collectively called hardware) can be used for variety of purposes as per computer programs (software).



## Types of Computers:

On the basis of speed and storage capacity computers can be classified in four broad categories:

- (a) Super Computers: Super computers are the biggest computers with very large storage capacity, operating at very high speed. Since the cost of such computers is very high they are used in big organisations like government agencies and larger companies.
- (b) Main frame Computers: They are among the larger computers more extensively used for business data processing.
- (c) Mini Computers: They are smaller than main-frame computers. These computers are very popular among medium sized business enterprises wherein the data processing requirements are limited. Personal computers (PCs) fall in ~~this category.~~  
~~development of program:~~

A computer works under the control of a program given to it by the user. Therefore, the effective use of computer depends upon the availability of good programs.

A program is an ordered set of instructions for the computer. It contains the steps to be performed by the computer to produce the desired output.

The development of a program involves the following steps:

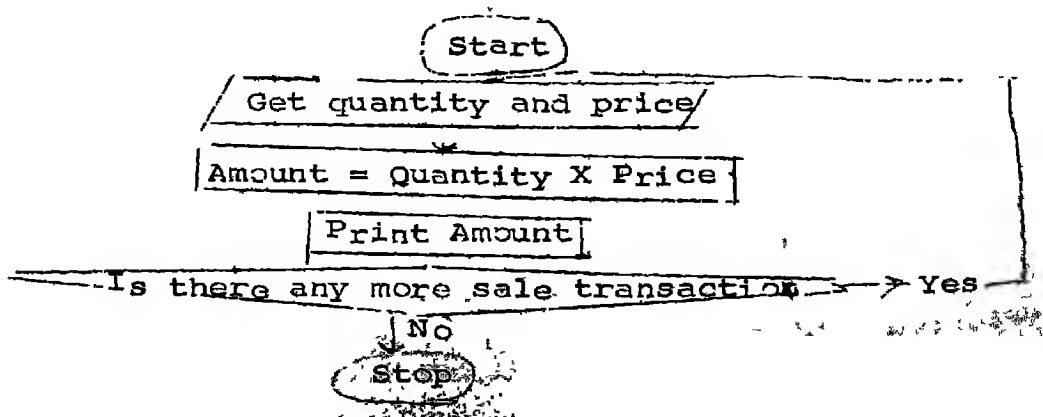
- (a) Define the problem: It involves spelling out specifications of the input data available and output required after processing the data.

For example, for development of a program to calculate percentages, input will be the marks obtained and maximum marks and output specifications will be the expressions in percentage.

(b) Design algorithm: It is the development of procedure for obtaining a desired output from the given input. Or, it can be said step by step instructions that are required to be executed to solve the problem. For example, to calculate and print the amount to be charged to customers; the following steps may be required:

- 1) get the value of the quantity and price of goods purchased
- 2) multiply the quantity with the price,
- 3) print the product of the two values,
- 4) if there is another sale transaction, repeat from step-1; else stop.

(c) Flow charting: The diagrammatic representation of the algorithm is called flow charting and such diagrams are called flowcharts. They represent the steps or events necessary to solve a problem through a computer. A flow chart to calculate and print the amount to be charged on sale:



- (d) Coding: Writing the program in computer language is called coding. There are different computer languages, such as BASIC, FORTRAN, COBOL etc. Each language is oriented towards a specific type of data processing work. For instance, BASIC is very popular for beginners in programming. COBOL is a business data processing oriented language,
- (e) Testing and removing errors: After coding the program is tested and the errors are removed from it. This step is very important because if errors in the program are not detected and removed in beginning, it may give wrong results which may prove to be costly for the user.

Some computer programs related to commerce area are illustrated for reference. Teachers may develop programs as per their liking and interest.

Name of Program: Balancing of Ledger Accounts"

Working Method:

Business transactions are recorded in the debit or credit of an account. After every debit and credit entry the balance of ledger account is calculated and written in the account.

For calculation of balance the debit and credit amounts are compared, the difference is written as balance giving the name (debit or credit) of the greater. If debit amount is greater the balance will be called debit balance, otherwise 'credit balance'.

Step by step procedure evolved from the strategy described above is given below:

Procedure:

1. Input debit total (D)
2. Input credit total (C)
3. Balance (B) = D - C
4. If  $B < 0$  then S Else }
5. Print "Balance Credit", - (B)
6. Goto 9
7. Print "Balance Debit", B
9. Goto 1

Basic Program:

10. Ram \* Balancing of Accounts \*
20. Print " Input the Debit total"
30. Input D
40. Print "Input the credit total"
50. Input C
60.  $B = D - C$
70. If  $B < 0$  then 80 Else 100
80. Print "Balance Credit", - (B)
90. Goto 110
100. Print "Balance Debit", B
110. Goto 20

Name of Program: "Charging depreciation on asset-I"

Working Method:

Assets are purchased for some value and after their usable life they can be sold. Purchase price of assets is called the 'Cost' the value which it fetches after expiry of effective life is 'Scrap value'. The difference in both is the loss in asset due to its use.

Total burden of loss is to be spread over the life of asset evenly and charged to 'Profit and loss Account'. So, the amount to be charged as depreciation may be:

$$\text{Amount of depreciation} = \frac{\text{Cost of Asset} - \text{Scrap value}}{\text{Life of Asset in years}}$$

The same amount will be charged as yearly depreciation for total life of asset. If it is used for months then the amount can be calculated proportionately.

Step by step procedure evolved from the strategy described above is given below.

#### Procedure:

1. Input value of asset (C)
2. Input scrap value after use (S)
3. Total depreciable amount (V) = C - S
4. Input estimated life in years (n)
5. Yearly depreciation (D) = V/n
6. Print the result.

For another machine/asset again 'RUN' Command will be given.

Name of Program: "Charging depreciation on assets"-II

#### Working Method:

Various assets are purchased by us. The value of assets deteriorates due to passage of time and use. This deterioration will be fast in the early years of life of asset and slow at the last. Therefore, sum of the digits method of charging depreciation is logical.

Under this program a machine costing Rs.35,000 is assumed to be purchased which had scrap value of Rs.550/- after 14 years. For charging depreciation under 'sum of the digits method, first, the sum of the year's digits must be calculated as  $S = 1 + 2 + 3 + \dots + 14$ . Second the total amount of depreciation must be calculated as  $A = \text{Rs.}35,000 - \text{Rs.}550$ , and in each of the 14 years, the depreciation will be:

<u>Year</u>	<u>Depreciation</u>
1	$(A * 14) / S$
2	$(A * 13) / S$
3	$(A * 12) / S$
4	$(A * 11) / S$
⋮	
14	$(A * 1) / S$

The multiplying terms in each set of parentheses (i.e. 14, 13, 12-1) is always (15 - the number of the year). This plays crucial role in designing the program.

#### Procedure

- 1) Print the headings "Year" and "depreciation".
- 2) initialize the values of number of years(Y1), total depreciable amount (A), and starting value of the sum of digits.
- 3) Calculate the sum of the digits with an accumulator.
- 4) The formula for depreciation is initiated and used repeatedly.
- 5) The result is printed.

```

10 Print "Year", "Depreciation"
20 Let Y1 = 14
30 Let S = 0
40 Let A = 35000 - 550
50 For Y = 1 to Y1
60 Let S = S - Y
70 Next Y
80 For Y = 1 to 14
90 Let D = A * (15-Y)/S
100 Print Y, D
110 Next Y
120 End.
```

Name of Program:

" Payment of Mortgage Loan in instalment".

Working Method:

Loans are borrowed which are paid with interest after a certain period and heavy amount is required for it. For making the loan soft it may be paid in equal instalments. Every instalment involves payment of interest on outstanding amount and repayment of some principal. After obtaining loan at a certain rate it becomes difficult to arrive at proper instalment as it involves complicated calculations.

A computer program however can be particularly useful in calculating the value of instalment and examining the effect of changing the variables to assist in choosing the most suitable amount of instalment.

Annual instalment required on mortgage can be calculated with following formula:

$$\text{Amount of Instalment} = \frac{P \cdot I (1 + I)^n}{(1 + I)^n - 1}$$

P: Principal - the amount borrowed.

I: Interest rate per annum, and

n: duration of mortgage.

Monthly instalments are usually 1/12 of the annual instalment. For examining alternative options of loan we have to change p, n or I, as required. At the time of changes the current values are also to be reminded.

Step by step procedures evolved from the strategy described above is given below:

Procedure:

1. Input rate of interest (I)
2. Input amount of mortgage loan (P)
3. Input period of loan (N).
4. Amount of instalment(R) = 
$$\frac{P \cdot I \cdot (1+I)^N}{C(1+I)^N - 1}$$
5. Monthly repayments = R/12
6. Print the results
7. Now input I, P or N to revise or start

Basic Program:

```

10 DEF FNM (x) = INT (x/.01 + .5) * .01
20 Print "Enter Interest Rate as % " ;
30 Input I
40 Let I = I/100
50 Print "Enter size of Mortgage";
60 Input P
70 Print "Enter Period of Loan (years)";
80 Input N
90 Let R = (P* I* (1 + I) ^ N)/(( (1 + I) ^ N) - 1)
100 Print "Monthly Repayments="; FNM (R/12)
110 Print
120 Print "Enter I, P or N to revise"
130 Print "Interest, Prindipal or years"
140 Print "Existing values are"
150 Print I, P, N
160 Print "or enter S to stop "
170 Input A $
180 If A $ = "S" Then 330
190 Print "Enter Revised V_alucs";
200 Input X
210 If A $ = "I" then 270
220 If A $ = "P" Then 290
230 If A $ = "N" then 310
240 Print "Revision Error: ", A $ " Entered"
250 Print
260 Goto 120
270 Let I = x/100
280 Goto 90
290 Let P = x , 300 goto 90, 310 Let N = x,
320 Goto 90, 330 END

```



Name of Program: Calculation of percentage marks.

Working Method:

In a test the answerscripts of four subjects, say English, Physics, Chemistry and Mathematics may be valued for different maximum marks. But for comparison it is necessary to convert the marks into percentages.

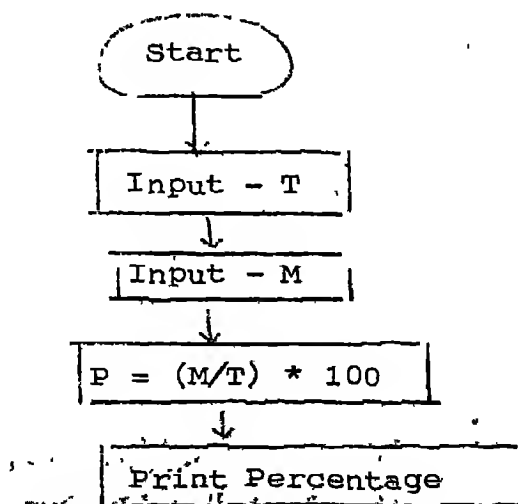
For conversion of marks into percentages, the marks secured are divided with total marks of the subject and the quotient is multiplied by 100. In this way the marks of all the four subjects are converted to a common 101 point scale and comparison becomes possible.

Similarly the marks obtained by different students may also be converted in percentages for comparison. Step-by-step procedure evolved from the strategy described above is given below.

Procedure

- 1) Input maximum marks (T)
- 2) Input marks obtained (M)
- 3)  $\text{Percentage} = (M/T) \times 100$
- 4) Write the result.
- 5) Repeat the process from step (2) till desired.

Flow Chart:



Basic Program:

Either

```
10      Rem * Marks into percentages *
20      Print "Maximum Marks"
30      Input T
40      Print "Marks obtained"
50      Input M
60      P = ( M/T ) * 100
70      Print "Percentage"; P
80      GoTo 40
```

Run

Program can not be stopped without 'BREAK'

OR

```
10      Input 'T'
20      Input 'M'
30      If M = 51 then 70
40      P = (M/T) * 100
50      Print P
60      Goto 20
70      End
```

Run

Any condition can be written at '30'.

Name of the Program: "Conversion of measurements in inches to centimeters and centimeters to inches".

Working Method:

Height, length etc., are measured in inches and centimeters. Sometimes, for the purpose of comparison, the expressions of inches are to be changed to centimeters or vice-versa.

For conversion of inches to centimeters, the length of  $n$  inches is multiplied with 2.54 or  $n$  inches = 2.54  $n$  centimeters.

For conversion of centimeters to inches the length of  $n$  centimeters is multiplied with .3937 to arrive at the inch value. or  $n$  centimeters = .3937 inches.

Step-by-step procedure evolved from the strategy described above is given below:

Procedure:

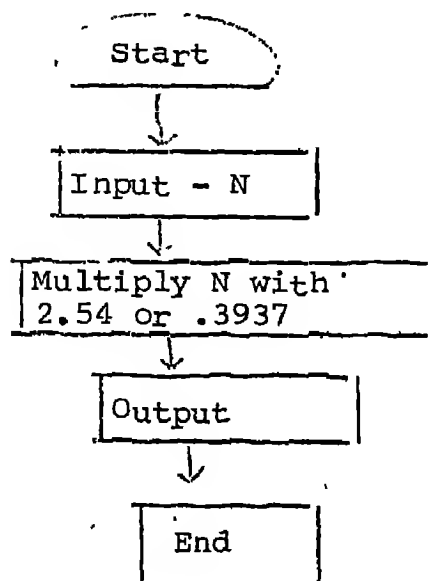
(a) Inches to centimeters:

1. Input  $n$
2. Multiply  $n$  with 2.54
3. Write the result.

(b) Centimeters to inches:

1. Input  $n$
2. Multiply  $n$  with 3937
3. Write the result.

Flow Chart:



Basic Program:

(A) Inches to Centimeters:

```
10 Input I
20 Let C = I x 2.54
30 Print C
40 End.
```

Or

```
10 REM * INCHES TO CENTIMETERS *
20 Print "Enter Next Length in Inch".
30 Input I
40 Let C = I x 2.54
50 Print "This Length in Centimeters is"; C
60 End.
```

(B) Centimeters to Inches

```
10 Input C
20 Let I = C x .3937
30 Print I
40 End.
```

Or

```
10 REM * Centimeters to Inches *
20 Print "Enter Next Length in Centimeters"
30 Input C
40 Let I = C x .3937
50 Print "This Length in Inches is"; C
60 End.
```

The advances made in software and program development have made the use of Computers very easy even for a layman. Now-a-days readymade computer software packages are available that permit interaction

between the computer and it's user in a very simple manner. Although a very large number of software packages are available for various applications but word processing, Electronic Spreadsheet and Data Base Management system are the most commonly used in the area of business. For the interest and use of teachers and students the task of development of Computer program is not difficult.

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## CONTINUOUS AND COMPREHENSIVE EVALUATION

Dr. P. Das,  
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The present system of evaluation does not adequately reflect the total growth/progress of the students. From the existing practices and from our long term experience, it is not difficult to pin-point some of the major shortcomings which need to be properly appreciated and accepted before taking up any plan of evaluation improvement. In a summarised way we can list out these as under:

1. Concept of evaluation is restricted to examination rather than a broad comprehensive concept of evaluation.
2. Evaluation is considered as end of the course/session rather than as an integral part of teaching-learning process.
3. Evaluation is considered as an act of measurement of students' learning rather than a means for improvement of their learning.
4. Evaluation activities are limited to scholastic aspect rather than total growth of the child.
5. Use of tools & techniques is limited to written examinations largely.
6. Quality of written examinations is questionable from the point of view of validity and reliability.
7. Diagnostic evaluation is still a dream of the future.
8. Using evaluation as a feedback has yet to become a reality for improving students' learning.
9. Evaluation is never conceptualised as objective-based, comprehensive, continuous, cooperative and dynamic process.

You may add many more glaring shortcomings of the existing system of evaluation. What is really worth stating is the cause of all these ills. The cause may lie with the teachers or the educational system in general. Therefore, there is an imperative need to make evaluation an integral part of the total teaching-learning process and to make testing continuous and comprehensive by taking care of all the three domains (Cognitive,

affective and psychomotor) for all round development of the learner in both scholastic and non-scholastic areas. In view of the above, the concept of evaluation can be developed.

Concept of Evaluation- The concept of evaluation should not be equated with the concept of examination or mere measurement. Broadly defined, educational evaluation is the quantitative and qualitative estimation of the overall growth and progress of pupils towards objectives or values in the curriculum and is concerned with values judgement and decisions making for improving teaching-learning process. The emphasis is evaluation is upon broad personality changes and major objectives of an educational programme. These include not only scholastic achievements, but also non-scholastic areas like attitudes, interests, ideals, ways of thinking, health, work habits, personal and social adaptability. Hence evaluation is integrally related to the teaching-learning process. It entails a value judgement and works as a quality control in educational programmes.

Purposes of Evaluation- Mainly evaluation helps in:

- a) determining the effectiveness of courses and programmes.
- b) testing assumptions about instructional practices.
- c) selecting, clarifying and appraising objectives.
- d) creating motivation.
- e) to assess total progress of the child.
- f) serving as a feedback for both teachers and students for effective teaching and learning respectively.
- g) discriminating and ranking the students.
- h) diagnosing pupils weakness/learning difficulties.
- i) providing basis for guidance and counselling.

Criteria of Good Evaluation- The criteria of good evaluation emerge naturally from the basic assumption about evaluation. They can be enumerated as follows:

- a) Evaluation should be objective-based: The evaluator should define or spellout clearly the set of objectives to be evaluated. The objectives may be knowledge, understanding, application, skills, attitudes, interests health, work habits, personal and social adjustment etc.

b) Evaluation should be a comprehensive process: Evaluation should cover both scholastic and non-scholastic dimensions of pupils' growth and use variety of appropriate tools and techniques of evaluation.

c) Evaluation should be a continuous process: Since evaluation aims at estimating overall growth of the child and basically growth is a continuous phenomena, it is imperative to make evaluation regular and continuous.

d) Evaluation should be a dynamic process: The approach of evaluation should not be rigid, static in nature. It should be flexible and dynamic in respect of frequency of examinations, and type of examinations etc.

e) Evaluation should be a cooperative process: Since the emphasis of evaluation is on all aspects of pupils progress, a single teacher is not competent to do justice for evaluation of all the dimensions of pupils' growth and hence the cooperation of all teachers, students and parents is essential.

#### Planning and Implementation Modalities of evaluation:

The following steps are suggested about the modalities of school evaluation:-

a) Determining the areas (both from scholastic and non-scholastic) and identifying the appropriate objectives under each area to be evaluated.

b) Selecting/preparing tools and techniques of evaluation. (Tools may include achievement test, diagnostic test, psychological tests, checklist, rating scale, records, and techniques may be in form of written, oral and practical examination).

c) Determining the periodicity of evaluation - In order to make evaluation continuous, periodicity of evaluation both in scholastic and non-scholastic area should be decided much in advance.

d) Executing the plan - Collection of informations or evidences may be done by using the tools and techniques already decided above.



e) Recording the results - Progress report cards both in scholastic and non-scholastic areas should be developed in order to record the results.

f) Using the results for instructional decision - The results of the evaluation may be effectively used for improving classroom instructions.

Scheme for comprehensive evaluation - The scheme of comprehensive evaluation may include the following aspects of pupils' growth and activities:

#### Scholastic Aspect

<u>Area</u>	<u>Periodicity</u>	<u>Tools &amp; Techniques</u>
Curricular areas	Five times in a year	<ul style="list-style-type: none"> <li>- Written examination</li> <li>- Oral examination</li> <li>- Practical examination</li> <li>- Achievement Test</li> <li>- Diagnostic Test</li> </ul>
Intelligence	Once at the beginning of the primary/Middle/Secondary stage	<ul style="list-style-type: none"> <li>- Intelligence Test</li> </ul>

#### Non-Scholastic Aspects

##### Personal and Social Qualities

<ul style="list-style-type: none"> <li>- Regularly</li> <li>- Punctuality</li> <li>- Discipline</li> <li>- Habit of cleanliness</li> <li>- Emotional Stability</li> <li>- Initiative</li> <li>- Sense of responsibility</li> <li>- Industry</li> <li>- Spirit of Social Service</li> <li>- Any other</li> </ul>	Daily/Monthly	<ul style="list-style-type: none"> <li>- Observation</li> <li>- Anecdotal Record</li> <li>- Rating Scale</li> <li>- Observation</li> <li>- Anecdotal Records</li> <li>- Rating Scale</li> </ul>
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##### Interests

<ul style="list-style-type: none"> <li>- Literary</li> <li>- Scientific</li> <li>- Musical</li> <li>- Artistic</li> <li>- Social Services</li> <li>- Any other</li> </ul>	Monthly/Yearly	<ul style="list-style-type: none"> <li>- Observation</li> <li>- Rating Scale</li> <li>- Anecdotal Records</li> </ul>
---	----------------	--

Attitude

- |                        |               |                 |
|------------------------|---------------|-----------------|
| - Towards Teachers     | Daily/Monthly | - Observation   |
| - Towards studies      |               | - Questionnaire |
| - Towards school-mates |               | - Interview     |
| - Towards School       |               | - Rating Scale  |
| - Any other            |               |                 |

Physical Health

- |                            |                 |                    |
|----------------------------|-----------------|--------------------|
| - Height                   | Twice in a year | - Observation      |
| - Weight                   |                 | - Interview        |
| - Chest                    |                 | - Medical Check-up |
| - Physical defects, if any |                 |                    |

- Activities

Literary and Scientific activities

- |                    |              |                    |
|--------------------|--------------|--------------------|
| - Library          | Twice/Thrice | - Observation      |
| - Debate           |              | - Anecdotal Record |
| - Recitation       |              | - Rating Scale     |
| - Creative Writing |              |                    |
| - Science Club     |              |                    |
| - Any other        |              |                    |

Cultural Activities

- |                      |                   |                    |
|----------------------|-------------------|--------------------|
| - Drama              | Halfyearly/yearly | - Observation      |
| - Music              |                   | - Anecdotal Record |
| - Dance              |                   | - Rating Scale     |
| - Drawing & Painting |                   |                    |
| - Anyother           |                   |                    |

Out Door activities

- |             |                    |                    |
|-------------|--------------------|--------------------|
| - Games     | Half yearly/yearly | - Observation      |
| - Sports    |                    | - Anecdotal Record |
| - Scouting  |                    | - Rating Scale     |
| - N.C.C.    |                    |                    |
| - First Aid |                    |                    |
| - Gardening |                    |                    |

The above guidelines attempt to indicate major directions in which the programme of evaluation deserves to move so as to realise the purpose of education. Orientation of teachers towards the new directions of continuous and comprehensive evaluation will not improve the system unless teachers tries to implement the scheme with sincerity and honesty.

The following follow-up action is suggested:

- 1) Organisation of Orientation programmes for teachers about the new directions of evaluation.
- 2) Keeping in view the school conditions, the scheme of evaluation may be defined and implemented on cooperative basis.
- 3) There should be regular supervision of the school evaluation programme and assistance may be provided to the teachers when they face any operational problems.
- 4) Format of progress cards may be developed and may be supplied to all schools for uniform record of results.
- 5) Action research relating to various aspects of evaluation may be undertaken, the findings of which will be taken as feed back for improving evaluation system.

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## EVALUATION IN VOCATIONAL EDUCATION

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Teaching of any subject should be learner centered, specially in vocational education. Students have to be educated according to their age, aptitude and abilities. Evaluation becomes a necessary tool in the educational process and it is a positive function. It should not create a fear and a failure complex in students.

Evaluation in vocational courses is more specialised job. In addition to theoretical knowledge, it is essential to evaluate the performance and personality characteristics. Skill development is one of the most important aspect of vocational education which is not instant and happens or takes place over a period of time. It is suggested that instructional objectives, based on the desired vocational competencies should be clearly spelt out for each vocational course. The scheme of evaluation should take these objectives in account and the total evaluation structure should comprise of comprehensive and continuous assessments of vocational students.

A comprehensive continuous evaluation should assess the progress of students individually in the following areas:

- (a) Scholastic Achievements
- (b) Performance in skill areas
- (c) Products produced by student.

There is need to give higher weightage to the quality aspect in vocational education in the system. It is difficult to define quality particularly with reference to educational process. In our Indian situation everything in education is sub-ordinated to examination and

grading, the quality aspect will receive no attention unless a 'balanced system' of evaluation including varied procedures is used for evaluating student's progress in vocational education.

In evaluation of student's progress in vocational education basic competencies and learning of skills is to be emphasized. Evaluation should be continuous one, it should be at several points of time to give immediate feedback to the teachers and students. Students should know from time to time, what they have learned? How much they have learned? ~~and~~ How well they have learned? The teacher should know from evaluation, what his instruction has done?, Where his instruction has failed? and where his instruction needs change?, so that all the students are able to master the skill. Hence, evaluation should be done by the teacher himself continuously during the academic session. There should be the component of internal assessment specially for practical portion of vocational programme and at least 20% weightage should be given to the internal assessment. Need for proper evaluation of practical skills can not be denied. Some important points for practical skill evaluation are:

- (a) at the time of evaluation not only the product but process of performance should also be given importance. Such evaluation should involve identification of various logical steps in performing different jobs and practicals. Observational evaluation of the student through these, besides the evaluation of final outcome, is necessary. Such an approach develops scientific attitude in the student.

develops specific attitude in the student.

(b) in the course of practical examination a number of small jobs or practicals should be set for a student to do. It will provide a comprehensive coverage of the skill which students are expected to develop.

(c) the scoring should be objective in place of subjective or arbitrary scoring. This may be attempted to be accomplished through the development of detailed marking scheme, for accessing the various steps or the processes involved in a job or practical.

Those connected with educational evaluation, one or the other way feel strongly that traditional approaches, practices and procedures are doing more harm, than good to students. It has given rise to number of malpractices, including the frequent use of unfair means. It is mainly because of giving more importance to examinations than they really deserve.

In real sense evaluation should be integral part of teaching-learning process giving importance to the three domains-cognitive, affective and psychomotor for all round development of learner in both scholastic and non-scholastic areas. The traditional examination system takes the cognisance of the scholastic area only which is not appropriate in current circumstances and specifically for vocational education. The emphasis should now shift from classifying the learners into classes and divisions in examination to assessment of the progress made by the learner, his potentials and weaknesses for taking necessary steps to bring about

the desired growth. For vocational subjects, there is need of more emphasis on practical aspect and the assessment is to be primarily done internally at school level by vocational teachers and not by any external agency. Evaluation should become the basis of continuous review and revision the instructions till the desired level of efficiency is reached.

National Policy on Education, 1986 emphasised for use of grades in place of marks in examination. It is much more appropriate in the area of vocational education. The centrally sponsored scheme on vocational education has given the following recommendations for evaluation:

"The performance of students in vocational courses will have to be periodically and continuously evaluated. This should be conducted through the concerned full time teachers of the courses and by involving part time teachers and the concerned collaborating agency. The school should keep a permanent record of such evaluation and the same should be annexed to the certificate awarded by the Board. Besides the internal evaluation suggested the board should also conduct a final external examination following the same mechanism as for academic stream. In both the internal and terminal evaluation, assessment of practical skills acquired will be a very important component, to be judged primarily by practical work/assignment. Since the employability of the vocational graduates would depend largely on the reputation, the school is able to make for it's courses rather than on the state wide picture, continuing and intensive efforts will be necessary to help each vocational school develop it's own identity and attain a level of excellence".



So, the followings should be involved in the evaluation work of vocational students:

- Vocational teacher(s)
- Principal
- Training place station Supervisors/Foreman
- Employer of the areas
- External Examiners (among the aboves).

A vocational teacher needs to use variety of tools and techniques of evaluation to suit the needs of varying situations. There are many devices such as oral test, written test, practicals, observations. A description of these devices follows here under:

#### Devices of Evaluation:

##### 1. Oral Tests:

Oral test is a face to face question answer activity between the examiner and the examinee. The examiner asks questions and examinee attempts to answer them. The examiner probes with the further questions or accepts the answers. Finally the examiner judges the quality of the answers and grades the examinee accordingly. Oral test is a valuable technique for the assessment of practical skills, projects etc. and for an indepth study of student's learning and has great significance in vocational education where practical skills are much more important. Properly devised and used oral tests may be both a good instrumental technique and a valuable means of evaluating students progress in vocational education. It helps in testing students knowledge, understanding, application of knowledge and diagnosing student's weaknesses on the spot.

### Rationale:

Evaluation provides a long array of tools and techniques for testing students. Among these tools oral tests are of great significance. The powerful potential of this tool which was realised in ancient times throughout the world need to be utilised in full in the area of vocational education. The most important bearing it has on vocational education is that it throws light on 'process' as well as 'product'.

Language, both spoken and written would remain a significant mode of communication for all the times. Oral communication is more natural, more frequently resorted to and is a natural medium for social interaction. Strangely enough we ignore this potential tool of evaluation and underly depend on written examinations. If the teacher community accepts the challenge of realising the full potential of oral examination, all the constraints in its implementation can be easily overcome.

### Objectives:

1. To enable the pupil to approach and negotiate problems set in a form of questions in an examination in a worthwhile manner.
2. To identify and analyse the vulnerable areas of student's insight specially contributing to his/her creative responses to any item of learning.
3. To stimulate student's interest in exploring newer and finer avenues of performance, comparison and contrast.
4. To reduce considerably if not altogether the emphasis laid on memory in the traditional examination.

5. To make the examination more comprehensive in nature by providing for testing wider abilities, areas.
6. To identify and analyse student's presence of mind as exposed through oral questioning.
7. To prove into students the insight that directs and focuses on his/her skill in appreciating and critically analysing items of creative activities in them.
8. To evaluate student's spontaneity, mannerism, presence of mind and presentation.
9. To upgrade the teaching learning process by shifting the emphasis from mere transmission of information to the development of abilities that would help the pupil in his later stage of life.
10. To boost the analytical and divergent approach to problems that necessitate finer creativity and critical enquiry.

Reliability:

The following points will act as guidelines on achieving higher reliability in the oral tests:

1. Higher reliability in the oral examination will primarily depend on the integrity of the teacher. If possible more than one examiner should be appointed to conduct the examination.
2. Systematization of oral tests, examiner's experience, training, alertness, tact, awareness and knowledge will reduce biases in marking the responses.
3. Adequate sampling of content and specifications will help in achieving higher reliability. Subjectwise blue-prints need to be developed for framing a variety of questions.
4. Weightages to different aspects to be evaluated should be determined in advance in order to have uniformity in marking by the same examiner or by more than one examiner.

5. Recording of marks awarded by each examiner should, for the sake of confidentiality, be made in a separate sheet and the final award should be made out of the average of these marks to ensure higher reliability.

EVALUATION OF RESPONSES : INPUTS TO BE CONSIDERED:

1. In order to minimise the element of subjectivity in evaluating the performance of an examinee, it would be advisable if a five point scale of grading is used as:

- A - Excellent answers - 75% or more marks
- B - Very Good answer - 60 to 75% marks.
- C - Good answer - 50 to 60% marks
- D - Average answer - 40 to 50% marks.
- E - Below average answer - below 40% marks.

While assessing the responses of an examinee, some specific suggestive inputs given below may be taken into consideration. Based on item wise marks, an overall grade may be worked out for each examinee. Depending upon the responses, weightages may be given to suggestive inputs. This is needed to bring out uniformity in marking by different examiners.

1. reproduction and understanding of concepts in the subject.
2. problem-solving/application.
3. critical thinking and creative appreciation.
4. coherent presentation of answers.
5. skills (use of tools, materials etc.)
6. an ability to demonstration of facts, figures in support of analysis.
7. general appearance showing presence of mind and behaviour of an examinee.
8. general interest in the skill.

(2) Oral tests should be administered skillfully to achieve reliable and valid results. The teacher should ask questions loudly and clearly so that the student listens and understands properly.

(3) The type of oral questions should be adaptable. The teacher should be able to construct the questions to suit the student and adapt it to another situation of the same type. Care must be taken to keep all questions comparable in difficulty in each category. Although grading of oral tests is usually subjective, efforts should be made to eliminate the influence of external factors such as favouritism, personal bias etc.

(4) For evaluation of personality traits:

- quickness
- gestures
- mannerism
- level of confidence
- alertness
- spontaneity
- reaction time, etc.

along with the insight over the subject matter and method of presentation should be considered.

#### Recommendations:

1. Qualitative improvement in vocational education is possible only when examination evaluates different skills-written, oral and practical in the students. Writing as well as speech and performance are important and should be developed in balanced manner and evaluated appropriately.

2. Oral tests should be introduced in the school system as supplementary tool to the written and practical tests.

All students would need to be exposed to this system by use of varied forms of oral tests in order to allow students to speak what he/she thinks or knows.

3. Skill/Job wise specific areas which are most amenable to evaluation through different forms of oral examination need to be identified. Oral examination may be resorted to in those areas for measurement of student's achievement and diagnosing difficulties on the spot.
4. Every term/periodical assessment in school should have oral examination with proportionate weightage in the composite marking scheme.
5. The main focus in oral test should be to develop the ability to express without fear or faltering. The examinee should be able to marshal the relevant points without wavering.
6. In vocational subject's oral <sup>examination</sup> tests student's quickness in supplying correct and precise answers, clarity of thought, presence of mind etc. are to be focussed.
7. In view of the fact the NPE 1986 envisages continuous and comprehensive evaluation at all stages of education inclusive of the vocational education, it would be in the fitness of things to make a judicious allocation of weightage to oral tests in both internal and external examinations.
8. Under the present circumstances, introduction of oral examination at public examinations may not be feasible but its utility for the external examination could not be ruled out after a successful field trial. Attempts may be made to introduce oral examination at public examination also on experimental basis in a phased manner

9. Contact points in each state may be established and with the help of willing teachers, oral examination should be tried out on an experimental basis as a measurement device in vocational education.
10. Question banks suited to this test should be developed on all vocational subjects-topicwise, which may be most amenable to oral examination.
11. The role of a teacher is important in organising oral tests. He/she should be a man/woman of integrity, and very fair in conducting oral examinations and giving grades to the students on the spot. A teacher should develop an attitude of self reliance and self sufficiency amongst students.
12. Proper planning of Oral tests is essential and for this Oral Tickets may be developed.

**Sample Ticket for Oral examination in office  
practice**

Topic:- Duplicating

Sl.No.	Question	Key words/clues to answers	Marks allotted	Specification
1.	What type of paper is to be used for duplicating.	Stencil paper	2	Recalls
2.	What material is used for correcting the mistakes on stencil ?	Correcting Fluid	2	Recalls
3.	Name the hand tool which is used for cutting the stencil in hand written form?	Stylus Pen	2	Recalls
4.	Which method of copying you consider appropriate for taking hundred copies of a circular ?	Duplicating.	2	Compares
5.	What adjustment in type writer is needed for cutting the stencil ?	Making the ribbon inactive.	2	Recalls
6.	Name the key which is used to make the ribbon inactive.	Ribbon control key	2	Recalls



## 2. Written tests:

Written test a form of closed book examination in which the examinee is given a set of questions in written form and is required to answer them on an answer sheet in a fixed period of time. The answer sheets are valued by the examiners and marks are allotted as per the expected answers of the questions. It is one of the oldest form of examination and developed a large number of evils in it, as:

1. Questions set mostly require recalls of information on the part of examinees.
2. Almost completely overlook the testing of higher objectives like understanding, application, analysis, synthesis, critical training, skills etc.
3. Subjectivity to the paper setter in setting a question paper.
4. Subjectivity of the examinee in interpreting the question set with a view to determining the scope of the expected answer.
5. Subjectivity of the examiner in examining the answer scripts.
6. In-effective coverage of the content.
7. Administrative problems of copying, malpractices etc.

The written tests may have the following types of test questions:

1. Essay Type or long answer type questions.
2. Short answer type questions.
3. Very short answer type or Objective type questions.

In place of objective type questions there is more suitability in the very short answer type questions as the former leaves more scope for malpractices and guessing.

The administrative procedures of conducting of examinations should be very well planned and carefully implemented if the desired out-comes are to be effectively achieved. The written examination is to be re-designed to confirm the major goals and the changed academic requirements.

Re-designing of question-paper:

A question paper is not a random assortment of questions. It has to be structured according to a pattern decided in advance with following inputs:

1. Preparation of a design:

The question paper design provides the policy which lays down the chief dimensions of a question paper. Weightage to different objectives, different areas of content, different forms of questions, scheme of options, sections in the question paper etc. should be decided in advance.

2. Preparation of a Blue Print:

Blue print of the question paper is basically a three-dimensional chart showing the placement of different types of questions in respect of the objectives tested, content area covered, form of question. It also indicates numerical weightage given to each question, scheme of options to be adopted in framing the questions. So, it is a operational lay out of the design for preparing a question paper, on the basis of one design several blue prints of question paper can be made.

3. Preparation of questions based on the blue Print:

With development of blue print the dimensions of each of the questions to be included in the question paper stands defined. As per location on the blue-print

individual questions have to be framed. The questions should be so worded as the examinees understand the scope and length of the expected answers.

#### 4. Editing the question paper:

##### a) Assembling the questions:

The questions are to be assembled usually on the basis of their form, i.e. fixed response type questions (Objective type, one word, phrase answer or very short answer type) may be put in one section, and the free response type questions (the short answer and essay type) may be placed in another section.

##### b) Instructions to the examinees:

The directions regarding what the students are required to do need to be clear, specific and pin pointed. General instructions may be given in the beginning of the paper and specific instructions relating to each section at the beginning of the corresponding sections.

##### c) Implications for administration:

It may be necessary to give specific limit for this section containing the fixed response type of questions. It will help to minimise the chances of common mal-practices.

#### 5. Preparation of the scoring key and marking scheme:

It is essential to frame the scoring key and the marking scheme, simultaneously with framing of questions of a question paper. Scoring keys to be prepared for objective type questions and marking scheme for essay and short answer type questions.

After administration of the question paper and getting its results, the analysis is also necessary to provide feedback for teaching and learning process.

Recommendations:

1. There should be development of detailed policy statement (designs) for each question paper by the examining agency and forwarding the same to the paper setters to be followed for setting balanced question papers in regard to subject matter to be covered, abilities to be tested, the form of questions to be included, the pattern of options, scheme of sections, wording of questions, etc.
2. Only those persons should be appointed as paper setters who are trained in the concept and techniques of evaluation in vocational education.
3. There should be adoption of appropriate strategy for the administration of the question papers particularly when they have fixed response questions. Question paper should be divided in different sections.
4. There should be mechanised processing of results. It saves time and labour and at the same time ensures greater accuracy.
5. There should be introduction of a system of grading by replacing the traditional scheme of giving marks in vocational subjects. When the students are given marks it is a common phenomenon to find students either gaining or losing (say division) just because of a single mark. If an overall assessment is done such mistakes may be easily avoided.

3. Practical Examination:

The vocational subjects are applied subjects and the purpose of vocational education is to develop practical skills and scientific attitude in students.

Proper weightage is to be given to the psychomotor

skills and also to appreciation, interests and attitudes. Psychomotor skills include manipulative skills, observation skill, drawing skills, reporting skills etc. There is need to define skills into their components for the purpose of evaluation of it, so that the nature and scope of project/practical/job is properly delineated.

Practical examination is a form of closed book examination in which examinee is allotted some job, practical or skill to complete in a given time. The examinee performs the job and at the same time examiner(s) observe and compare the performance with standard one and value in the form of marks or grade, but grades are considered better in vocational education. It may involve group work or individual work. Appropriate weightage will be given to the process and product both.

Development of skills is a continuous process and the progress should be monitored by the vocational teacher. The evaluation of practical work should be internally conducted by the concerned vocational teacher/teachers and should be shown on the performance record of the student. At the end of plus two stage also external evaluation may not be a right approach for vocational education. However, if the programme is likely to suffer in the absence of such an evaluation, (external), the practice of examining the students by external examiners particularly drawn from the cluster of schools of which a particular school is a member may provide a better alternative.

The Vocational Teachers should keep a systematic record of students progress in vocational education, apart from the teacher's record, each student may be asked to maintain his own record in form of student diary. They

should make necessary entries in diary and submit to the teacher after completion of the job. It may also work as feedback to the teacher for his further teaching.

A well designed plan of continuous and comprehensive evaluation using worthwhile evaluation criteria should be prepared as per needs of the subject area. Every practical examination should be having at least 5% weightage on oral test. The assessment may be made and recorded after every operational stage of activity/project/job.

Product or result of performance, process of performance and development of personality traits are the three aspects which are equally important in teaching and testing of a vocational subject. It will be desirable to specify them in terms of specific tasks envisaged under each aspect, which will differ in vocational subjects, and different topics/skills in a vocational subject. A clear specification will help both the vocational teacher and testers for objective based evaluation.

#### Process Vs. Product Evaluation:

The evaluation which pertains to the process is referred to as formative evaluation and that concerned with the product is called summative evaluation. But the product is a cumulative entity and its components begin to emerge during the process, it becomes difficult to differentiate between formative evaluation and summative evaluation. In fact, they are supplementary and complementary to each other in the whole enterprise of evaluation.

For evaluating students on skills, both process and product of performance are involved and as such both have to be assessed. Process of performance may be judged in terms of speed which can be measured more objectively.

It can also be measured in terms of quality of performance that indicates the effect on the product of performance.

Evaluation of product is more reliable than evaluation of process as:-

1. More time is available for its assessment.
2. Independent judgement of scores by different examiners is possible to check results for inter examiner reliability.
3. a scale of product can be developed to facilitate objective scoring.
4. examiners can be trained in the use product scale and their reliability in grading can be checked against the experts judgement.

A thorough acquaintance with both is, therefore, essential while selecting a particular vocational skill and developing instructions for evaluating practical work. Since observation of process is time consuming and rate of performance may vary from individual to individual, proper assessment of process of performance is difficult although efforts need to be done in this direction.

#### Evaluation of Practical records:

Some of the points which should be taken into consideration in evaluation of practical records are listed as:

The practical records should be written in a uniform style throughout. Headings and materials should follow a consistent format. Report must be written in clear and concise terms. The tone of the records should be one of the appropriate modesty as per needs of the vocational subject. Since, records are the reports of what the student has done, it should permit the reader to reconstruct what happened without distortion. They should be valued as per the quality as mentioned above.

Recommendations:

1. The vocational teachers should have a positive attitude of mind towards practical work and hardly typical field problems they should pose.
2. While evaluating skills, one must take into account the various types of component skills involved. During the instructional process these component skills will have to be developed in a proper sequence.
3. Practical evaluation in the area of vocational courses can not be a one time affair. Appraisals will have to be done continuously as a part of the instructional programme. After completion of each unit a test of practical performance should be administered to assess the relevant skill of the student.
4. The product produced by the student may be judged by more than one teachers separately, and average of the marks may be recorded as grade. A well turned out product with minimum input of time, labour and money but maximum input of imagination, originality, precision and preserverance should be rated high.
5. If possible the persons from employing agencies may be involved at the time of evaluation of practical skills.
6. Internal tests should be given with regular intervals and systematic record of the assessment should be maintained.
7. Directorate of vocational education should finalise a uniform internal assessment system for vocational schools throughout the state for this purpose systematic guidelines are to be formulated at the state level.



### Grading

Grading is a system of classification of students into a few ability groups or categories according to their level of achievement in an examination. The achievement is defined in the form of numerical or letter grades each of which denotes a certain level of performance, generally not in absolute terms, but in relation to the performance of the whole group.

When marks are used as a criterion for selection, there is an implicit assumption that the student getting 60 marks is superior to the one getting 59 marks. The declaration of results in terms of grades is essentially to discourage such misuse of marks and to provide a valid and realistic categorisation of students that takes into account the limitation of the reliability of examination. It is mainly because of these considerations the national policy in education, 1986 has emphasised the need of grading system in examination.

### Limitations of markings:

1. Marks are absolute measure of performance and there is much variation in the pattern of marking.
2. In a 100 marks question paper a 101 points scale is available for marking, but due to setting of question paper or marking quite a narrow range of the scale is actually used. For example in mathematics the entire range 0-100 is used but in english it is 0-80, in history 0 to 60 or 70 and so on. As a result 70 percent of marks in Mathematics do not indicate the same level of achievement in History.
3. Inter-examiner variability is high even in centralised or spot evaluation of answer scripts. In practice when marks are used for selection purpose a student with one higher marks is selected while his true marks may be the same.

4. Reliability studies of examination marks have shown that standard error of measurement in a 100 marks paper is usually 5 to 15, depending on subject, type of paper and marking. If SEM is 10, then for a student whose true marks are 55 the chances are that his actual marks are anywhere between 45 to 65. Then the sanity of the difference looses.
5. It is also not justified to add the marks of different subjects to arrive at a total score of the student. Since the marks of different subjects are on different scales and also measure different attributes, their addition amounts to totalling quantities which cannot be added. Such totalling of marks is analogous to adding air-pressure, temperature and humidity and then supposing that the sum of these numbers is the description of weather.
6. For crucial decision of passing or failing a student a cut score of 33 or 35 or 40% is used, but in view of the poor reliability of marks, a large proportion of students get misclassified unjustly. Usually benefit of doubt is given to the boarder line cases by examiners individually as well as at the board level in the form of grace marks which leads to heaping of students just above the pass marks. Moreover to another and from one year to another in the same subject would make any one question the basis of using the same fixed cut score as minimum pass percentage in every subject and every year in the same subject.

To overcome these shortcomings of marks it is proposed to use grades instead of marks for declaring student's results in vocational education. This however does not mean that marks should be done away with completely and grades should be used even in marking answers to various questions in a paper. Marking system may continue as it is, only the marks should be converted to grades in such a way that they define relative levels of achievement of students uniformly for all subjects.

### Methods of Grading:

(a) Grades based on absolute marks: It involves direct conversion of marks into grades. Whatever the distribution of marks in a subject, the marks between two fixed points on 0-100 scale would correspond to a given grade. One of the example may be:

75% or above	: Distinction	-	Grade	A
60-74%	: 1st Division	-	"	B
45 - 59%	: 2nd Division		"	C
33-44%	: 3rd Division	-	"	D
Below 33%	: Fail	-	"	E

It is possible to form any number of grades as per group of marks. However, in view of disparity there may be no student in english getting grade A while a quite often will be getting grade A in mathematics. Here raw marks are treated as if they were the standard scores, which can be equated. It means the assumption that any given score say 60, denotes the same level of achievement whatever be the subject, question paper or year of examination. The advantage with this method is that it is very simple and state forward to apply. The grades basing of absolute marks indicate his own achievement without any importance to others performance.

(b) Grading based on relative marks: It involves conversion of marks into grades on the basis of random order or percentiles. In this case the distribution of marks is taken into consideration determining the range of marks corresponding to different grades. For Examples:

the top 5% students	-	Grade A
Next 10%	-	Grade B
Next 10%	-	Grade C etc.

Here the actual cut off score for grade A in one subject may be quite different from that of another subject. The grade that a student gets depends on the relative performance of the group. The approach is test oriented.

## EVALUATION CRITERIA FOR STENOGRAPHY TRADE

Dr. R.N.Dishit

Evaluation of performances in a skill building subject like stenography and typewriting has a number of uses. It is used as a self checking device by both the teacher and the students in class room situations. It may also be used by the public examining bodies for awarding the competency certificates for employment and promotion. The importance of evaluation as an admission criteria and a guidance device can also never be underestimated. The merit-ranking is also one of the important reasons for which evaluation is done. Lack of training in the evaluation techniques of SG & TY, the measurement do not satisfy the three basic principles of reliability, validity and objectivity. Keeping in view the intricacies of evaluation in a trade like SG & TY, few suitable international standards measuring the performances have been discussed in this paper.

### Evaluation technique in stenography

The Shorthand writers in the public examinations take dictation for about a period of ten minutes at the prescribed speed. They are asked to transcribe the same at about fifteen to twenty words a minute. A good stenographer usually follows the six links of the transcription viz., "Shorthand, typing, English, punctuation, spelling and work habits". The examiner in awarding the number/marks follows the following four steps.

- (a) First of all, the transcript should in no way alter the very spirit of the content of the passage or the letter given for transcription.

- (b) Five per cent errors of omission/or commission are tolerated in the transcription sheet.
- (c) One who commits more than five per cent mistakes are disqualified.
- (d) Award the qualifying marks to those candidates who commit five per cent mistakes.
- (e) Award more and more marks to those candidates who commit less and less percentage of mistakes. Example: If the qualifying marks in a public examination is 50 per cent, the gradation of the gradation of awarding marks will be as follows:

5 per cent mistakes	50	marks
4 per cent mistakes	60	marks
3 per cent mistakes	70	marks
2 per cent mistakes	80	marks
1 per cent mistakes	90	marks
No mistakes	100	marks

#### Evaluation technique in straight-copy typing

The evaluation is, however, little more complicated in typewriting public examinations. The evaluators in a typewriting public examination should have the following knowledge and understanding. These rules are made applicable for straight copy typing.

1. Five strokes constitute a word. The striking of shift key, the space bar and the tabulator are also counted for this purpose.
2. Ten strokes are deducted from the total typing strokes for every error of omission and commission.
3. Gross Words are the total number of words typed including the wrongly typed words. Net-words are calculated after deducting from the gross words fifty strokes or ten words for every full mistake committed.

4. Net words typed divided by the duration of time is the average speed (i.e. words per minute/WPM) of the candidate. This forms the basis of awarding the marks.
5. Calculate the average gain or loss of a candidate in the speed test. This is arrived at by dividing the minimum pass marks by the required number of speed per minute.
6. Now multiply the maximum marks with the average gain or loss as calculated above. This will be the marks to be awarded to the candidate.

Example

No. of words in the passage ....	300
Duration of typing .....	10 minutes
Maximum marks .....	20
Minimum pass marks .....	10
Total words typed .....	400
No. of words wrongly typed....	2

Marks to be awarded will be calculated as follows:

Penalty  $2 \times 10 = 20$  words.

NWPM (Net words per minute)  $380 \div 10 = 38$

Average gain/loss per minute =

$$10 \div 38$$

Marks to be awarded  $(10 \div 30) \times 38 = 12.6$  or 13

The acceptable standards however, for internal assessment in typewriting performances may be as follows.

- (a) Gross words a minute (GWAM) with Error limit.

Here the total words are divided by the duration of the test with no deduction for errors. No. of errors committed however simply mentioned. But if the errors exceeds five per cent the student is penalized for the mistakes exceeding the limit i.e. five per cent.

- (b) Net words a Minute (NWAM) is calculated after penalising for every error. Ten words are deducted from the total words typed. The Net words are divided by the duration of test.
- (c) Correct Word a Minute (CWAM): In order to calculate the CWAM, the number of errors are simply deducted from the total number of words typed. This figure is divided by the duration of time to arrive at the speed per minute.
- (d) Net Performance Rate (NPR): Here no penalty is charged for corrected errors, except for the time that is lost in erasing and correcting them. A penalty is, however charged for uncorrected errors which is usually higher than ten words an error.

Given below is a list of errors in typewriting for which the candidate is penalised i.e. ten words deducted for each error.

- (a) Wrong capitalization
- (b) Non capitalization
- (c) Over typing
- (d) Space given where not required
- (e) Transposition letters.
- (f) Spelling mistakes.
- (g) A word/figure or letter left out in typing.
- (h) Addition of any letter or word.
- (i) Typing of figures in places of words and vice versa.
- (j) Improper spacing before and after punctuation signs.
- (k) Substitution of a word.
- (l) Insertion of any word or letter by hand with pen or pencil.

Mechanical mistakes, and repetitive mistakes like same spelling mistakes or improper spacing before and after punctuation signs are penalised once. Each of such mistakes may be treated as half mistake or exempted in special circumstances.

Evaluation technique in Production Tests: Production tests are conducted for typing out business letters, rough drafts, manuscripts, tables and so on. The production test is a timed test of half an hour or so within which the candidate is expected to produce a mailable letter or a clean draft or table and typing the manuscripts as per the directions. Within the prescribed time-limit the candidate is required to do all the activities necessary to accomplish the project of typing a mailable letter or a table or typing a confused manuscript in its proper perspective.

The following two standards of measuring production tests are familiar with the examiners.

(a) Mailable Words a Minute (MWAM): Standard was developed by Balsley through extensive research. This standard penalizes a typist for an error by the time it takes him to make a correction. She found that 26 seconds are needed, on the average to make a correction without a carbon copy.

(b) Production Rate a Minute (PRAM): In a gross-PRAM, no penalty is charged for errors. Net-PRAM is required in a public examination where errors are not corrected. Production Rate A Minute is calculated as follows:

- Count all words in 'Acceptable problems'.
- Count half the words in the 'unacceptable problems'
- Divide the total of the above two by the time of the test.



1

REPORT OF THE ORIENTATION PROGRAMME FOR VOCATIONAL  
COMMERCE TEACHERS HELD AT R.C.E., BHUBANESWAR FROM  
THE 1ST MARCH TO THE 10TH MARCH, 93.

An Orientation Programme for Vocational Commerce Teachers, Junior Lecturers and Instructors was held in the Extension Unit at the Regional College of Education, Bhubaneswar from the 1st to the 10th March, 1993. The objectives of the programme were:

- To identify the vocational areas in business,
- To devise ways and means for self-employment,
- To evolve the criteria of evaluation for certain vocational subjects like Stencography, Type writing, Office practice and Accountancy,
- To develop the skill of handling the sophisticated business machines like electronic typewriters, photo-stat copier and the micro computers,
- To chalk out the layouts and requirements of a business vocational department in the school,
- To develop the skill of preparing practical note on vocational business subjects, and
- To acquaint the participants with the new techniques, methods and approaches of teaching vocational business subjects.

For the successful implementation of the programme, methodologies like lecturing, discussion, study tour and group discussion were adopted. Thirty participants were invited to participate the programme but only twenty four attended. They were two from Bihar, one from Sikkim, one from Arunachal Pradesh, three from Assam and seventeen from Orissa.

Our achievements in the programme have been as follows:

- More of vocational areas in commerce have been identified like Tax Assistanceship, Accounts Assistanceship, Accounting for small traders, Cost Assistanceship, Stores Assistanceship etc,
- Exposure to entrepreneurial motivation for self-employment,
- Exposure to self-employable schemes as envisaged by the SIDBI,
- Development of the skill of writing practical lessons in Vocational Commerce areas,
- Exposure to upto date business machines including Laminator, binders, electronic typewriters and micro-computers,
- Appreciation of (a) various methods, technique and approaches, (b) grading and ranking techniques of vocational business subjects,
- We had a study tour to the neighbouring areas on the 7th March, 1993.

Lastly, evaluation of the programme was done. The participants were asked to ventilate their feeling through a questionnaire. They appreciated the practice of 'on the job training' writing on the basis of skill components. They felt the need of appointing a person in every vocational school who should take care of guidance, counselling and placement.

The Programme Director is thankful to the Principal and Dean of Instructions for their cooperation and guidance.

The Programme Director is also thankful to the guest speakers who encouraged participation, delivered talks and discussed. Thanks are also due to the Resident Manager, Ollivetti (Group Industries), and the Manager, Otto Business Machines for their fruitful demonstration of sophisticated Business Machines.

Lastly thanks go to the Asst. Programme Coordinator, Extension Services Unit and his members of the staff for their valuable cooperation.

sd/-  
( Dr. R.N. Dikshit )  
Programme Director



AN ORIENTATION PROGRAMME FOR VOCATIONAL  
COMMERCE TEACHERS - An evaluation

Duration : March 1 to 10, 1993      Venue: R.C.E., Bhubaneswar

Each participant is requested to tick out his/her preference under each of the following item.

1. Achieving the objectives of the programme

(a) Fully      (b) Mostly      (c) Partially      (d) Not at all

2. Duration

(a) Too long      (b) long      (c) alright      (d) short.

3. Programme design

(a) Very Satisfactory      (b) Satisfactory      (c) Manageable  
(d) Not at all satisfactory

4. Coverage of the programme

(a) Fully      (b) Mostly      (c) Partially      (d) Not at all

5. Effectiveness of the session: Write

- (A) if most effective  
(B) if effective  
(C) if somewhat effective  
(D) if not at all effective

<u>Date</u>	<u>Programme</u>	<u>Remarks</u>
1.3.93	Vocational Schemes in India	_____
	Vocationalization of Business Edn.	_____
	Demonstration of Business Machines	_____
2.3.93	Vocational teachers . . . . .	_____
	Physical facilities and equipments for Vocational Commerce class . . .	_____
	Preparing practical note on Office Practice	_____
3.3.93	Commercial Auditing as a vocational subject	_____
	Government Accounting	_____
	Teaching approaches of Accountancy	_____

P.T.O.

<u>Date</u>	<u>Programme</u>	<u>Remarks</u>
4.3.93	Commercial Auditing as a vocational subject	_____
	Govt. Auditing as a vocational subject	_____
	Curriculum construction in vocational commerce subject	_____
5.3.93	Computers in Vocational subjects working on computers	_____
6.3.93	Insurance as a vocation evaluation procedures	_____
	Evaluation technique in SG and Typing	_____
	Evaluating students' programme	_____
7.3.93	Study Tour . . . . .	_____
8.3.93	Demonstration of Electronic typewriter	_____
	Schemes of assistance of SIDBI	_____
	Entrepreneurial Motivation	_____
9-3-93	Group Work . . . . .	_____
10-3-93	Case study approach of teaching crossing of cheque	_____
	Self-employment opportunities for +2 Vocational students	_____

6. (a) Your overall observation and suggestions for improving future programme \_\_\_\_\_

(b) What are the newer vocational areas for which courses should be started ?

(c) What types of training do you need for your professional growth ?

# REGIONAL COLLEGE OF EDUCATION, RAIPUR

## ORIENTATION PROGRAMME IN VOCATIONAL COURSE SUBJECTS

Date	10.00 - 11.30 AM	11.30 - 1.00 P.M.	1.00 PM - 2.00 PM	2.00 - 3.30 P.M.	3.30 - 5.00 P.M.
1.3.93	Registration	Inauguration			
2.3.93	Vocational Teachers (Mr.R.Raizada)	Physical facilities and equipments for Voc.Comm. class. (Dr.R.N.D.)	L Vocationalization of Education-an overview (R.Raizada)	Preparing practical note on office practice. (Dr.R.N.D.)	Demonstration of Business machine. (S.B.Mathur and Anuj Uppal,HCL)
3.3.93	Auditing as a Vocational subject. (Prof.D.C.Nayak)	Govt.Accounting (Mr.G.Sharma)	N	Teaching approaches of Accountancy. (Dr.R.N.D.)	Group Work
4.3.93	-do-	Group Auditing (Mr.A.Nanda)	C	Curriculum construction in Voc.Comm.subjects. (Dr.R.N.D.)	Group Work
5.3.93	Self employment opportunities for +2 students.	Computers in Voc.subjects (R.Raizada)	D	Working on computers (R.Raizada)	Vocational schemes in India (Prof.STVGA)
6.3.93	Insurance (Mr.S.B.Mishra, IEDO)	Evaluation procedures. (Dr.P.Das)	R	Evaluation techniques in S.G. and typing. (Dr.R.N.D.)	Evaluating students progress. (R.Raizada)
7.3.93	Practical Banking (Chief instructor, SBI TRG Centre)	Case study approach of teaching crossing of cheques. (Dr.B.N.D.)	A	Group Work	Group Work
8.3.93	Demonstration of Business machines. (Mr.R.N.Rathasharma)	Schemes of assistance of SIDBI. (Mr.G.Satyanarayanan)	K	Entrepreneurial Motivation. (Mr.S.B.Mishra)	Group Work
9.3.93	Group Work	Group Work		Group Work	Group Work
10.3.93	Group Work	Valedictory Function		Disbursement of T.A. and D.A.	

(Signature)